

COGNITIVE PREDICTORS OF COHERENCE IN ADULT ESL LEARNERS' WRITING

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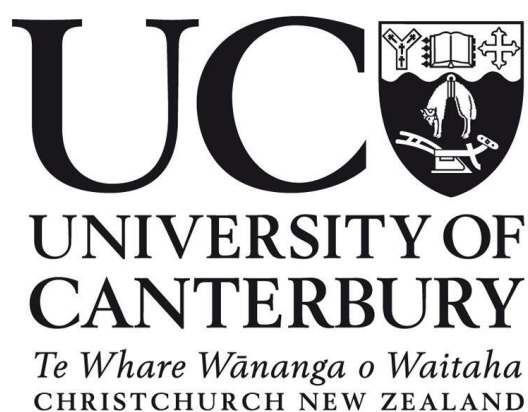
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Dedication

Dedicated to my parents, my family and my teachers who have been source of love and inspiration

My friends

My support

Declaration

The material presented in this thesis is the original work of the candidate except as acknowledged in the text, and has not been previously submitted, either in part or in whole, for a degree at this or any other university.

Abdul Saeed

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spending time in his studies. My heart also prays for my parents who sacrificed a lot to have me a good and successful life. Thanks for their love and prayers which are asset to my life.

~ Abdul Saeed

Abstract

Coherence is considered as one of the most important qualities of writing. It is defined as the semantic unity that binds the whole text together. Yet, in spite of its fundamental importance, it is still considered a fuzzy and abstract concept in most English Second Language (ESL) contexts. As a result, a large number of ESL learners struggle to produce a coherent text. Morphological, phonological and orthographic awareness, as well as vocabulary knowledge and grammatical competence, have been identified as predictors of writing quality in novice writers. There is, however, a lack of data which can be used to assess whether these language skills are predictors of coherence in adult ESL learners' writing. The purpose of this study is to provide data on which to determine the potential ability of such basic language skills to predict coherence in ESL writing.

University students from Pakistan (N=127), both male and female, participated in the study. They were given measures of morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence. They were also asked to write an essay on a given topic which subsequently formed the basis of coherence analysis undertaken in this study. Due to the proposed subjective nature of the concept of coherence, and hence varying views about how to assess this concept in writing, four different measures of coherence were used in the study. These were the coherence section of the IELTS writing rubric (IELTS, 2019), Holistic Coherence Scale (Bamberg, 1984), Topical Structure Analysis (Lautamatti, 1978) and Topic Based Analysis (Watson Todd, 2016).

Statistical analyses were conducted to examine the relationship between the variables. Correlation analyses showed that vocabulary knowledge, morphological

awareness, and though to a lesser extent, grammatical competence showed a small but significant relationships with all four measures of coherence. In contrast, measures of phonological and orthographic awareness did not seem to be associated with coherence. Regression analyses were also conducted in order to find out the contribution of these language skills in the making of coherent texts. Regression analyses confirmed the associations identified through correlational analyses, but also indicated that only a relatively small amount of variability in coherence was explained by these language skills.

Correlation analyses were also conducted between the sub-components of the different measures of coherence in order to identify potential components that would be indicative of coherent texts and common across different perspectives on coherence. Although a number of commonalities across the different assessments were identified, there were also a large number of differences between the measures that argue for very different perspectives about coherence to be prevalent in the literature. Based on these findings, plausible reasons for the associations were offered and subsequent future research focusing on potential alternative predictors of coherence, and the need to develop more consensus on the concept of coherence, were proposed.

Publications/Presentations Arising from the Thesis

Saeed, A., Everatt, J., Sadeghi, A., McNeill, B., & Syed, M. (2019). *Cognitive predictors of coherence in adult ESL learners' writing*. Paper presented at the meeting of 6th International Language in Focus (LIF) Language, Research, and Teaching in the 21st Century, Dubrovnik, Croatia. (2-4 May 2019).

*Reading maketh a full man;
Writing maketh a complete man.*

Sir Francis Bacon

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

This thesis reports a study conducted to determine the potential relationships between different language skills (morphological, phonological, and orthographic awareness, vocabulary knowledge and grammatical competence) and levels of coherent writing produced by adult Pakistani ESL learners. This first chapter describes the background that provided the bases for the preset study. The chapter also provides details about the problem statement, importance for the study and the research questions that were investigated in the study. Chapter one also provides a detailed organizational plan of the study that was executed systematically to answer the raised questions.

1.2 Background of the study

The process of language learning involves developing mastery over the four basic language skills of listening, speaking, reading and writing. A learner is supposed to learn these four skills in order to have effective communication (Burns & Siegel, 2017). These language skills are further categorised as productive and receptive skills. Listening and reading are known as receptive skills as they assist in comprehending the message, whereas speaking and writing are known as productive skills, used to communicate the message through speaking and writing (Widdowson, 1978).

Generally, writing is considered more difficult than speaking since the complexities involved in the process. (Kellogg et al., 2013; Kim et al., 2013; Kim et al., 2015). For example, a writer needs to learn transcription rules, appropriate word order for sentence writing, as well as proper use of punctuation marks and correct spelling,

skills which are not necessary for speaking. Writing, therefore, is not a naturally acquired skill, like speaking and listening. Rather, it is a skill which needs continuous practice (Alamargot et al., 2006). In this regard, writing is closer to reading in which a learner has to learn the codes of the writing system in order to comprehend the message. However, writing is more difficult than reading because sole responsibility lies on the writer to weave the text into a coherent whole which is easy even for the distant reader to comprehend.

Writing process in a second language is likely to be even more challenging because a writer has to contend with the second language sociological, physiological and cognitive constraints (Ellis, 1994). Writing in a second language is difficult because the learner has to acquire not only a new set of writing/communication rules, but also the rules of the new writing system which may differ markedly from those of the learner's first language. Therefore, it has been found that the second language learners of English face problems in producing a composition that is free from grammatical and compositional errors (Khalil, 1989; Lee, 2002a). More importantly, learners of English as a Second Language (ESL) and English as a Foreign Language (EFL) may face difficulties in writing a coherent text in their second/additional language and, as a consequence, therefore, will fail to communicate the message clearly without any divergence from the main topic (Phuwichit, 2004).

Academic writing has been found to be a great challenge for ESL and EFL learners during their academic years (Ángel et al., 2017; Johns, 1986) entailing specific features different from general composition. Such differences may occur in the typical length of an assignment (academic writing is usually longer), academic vocabulary which may require the use of subject specific terminologies as well as the need to refer

to citations from other writers to support the writer's point of view. Therefore, ESL learners have to make extra effort in order to produce the required academic written level thereby achieve success in their academic career.

Writing is a complex cognitive process in which a writer performs several actions simultaneously such as planning, writing and revising (Hayes & Chenoweth, 2006). In the planning process, a writer generates ideas, keeping the main topic in mind, and organises ideas accordingly. During the writing or transcription process, these ideas need to be put on paper in a concrete form. In the revision process, a writer needs to analyse and edit these ideas accordingly. Writing is mainly not a linear process, rather it is recursive, which means all these processes occur simultaneously (Flower & Hayes, 1981a). At the time of planning, a writer also revises their ideas and, while writing, will further distil, organise and plan the ideas.

This recursive situation is more difficult in case of second language writing because ESL learners also need to tackle other cognitive challenges, such as L1 interference (Ellis & Yuan, 2004), cultural diversity, which affects the thinking processes, and a lack of target linguistic knowledge (Kellogg et al., 2013). Faced with the complexities of this process, and with the aim of supporting learners and making the writing process easier both in L1 and L2, researchers have attempted to detect different predictors of writing. Having proficiency in these language skills should predict the writing quality of the learners.

1.3 Statement of the Problem

Coherence is an essential and important construct to assess one's quality of writing (Bamberg, 1984; Candelo et al., 2018). Although due to its multi-faceted views, it is very difficult to designate coherence in a single definition. Traditionally it is defined as the semantic relationship in the text whereby all elements are logically joined together to give a single unit of meaning (Knoch, 2007). Yet, in spite of its fundamental importance in writing, it is deemed to be a fuzzy and abstract concept in most of ESL contexts (Lee, 2002b), a misconception which often leads to its neglect in teaching and learning (Attelisi, 2012). One consequence of this deficit is that many ESL learners struggle to produce coherent text.

Besides coherence being deemed fuzzy and abstract, text linguists differ in terms of defining coherence as text and reader-based construct. Text linguists, such as Kintsch and Van Dijk (1978), Brostoff (1981), and Johns (1986), consider that it is the responsibility of a writer to embed all necessary features of coherence in the text to make it comprehensible. In contrast, De Beaugrande (1980), Jacobs (1982), and Rumelhart (1994) consider reading as an interactive process between the reader and the text, and see the reader as the consumer of the text, so it is the specific reader who will interpret whether the text is coherent or not.

Coherence is a subjective construct by nature (Van Dijk, 1977). This is the reason why most of the measures for coherence analysis are subjective and as a consequence, it has proven difficult to find a completely objective measure (Watson Todd, 2016). At the assessor level, the subjectivity of coherence is potentially further aggravated when different assessors, using different measures of coherence, arrive at different analysis and interpretation of the same text. However, a reasonable agreement

is possible to achieve (Van Dijk, 1977). Nevertheless, this subjectivity may also become the reason for disagreement between teachers and students as teachers face problem to show students what exactly is wrong in the text in terms of incoherency; and in contrast to the relatively easier task of identifying errors of grammar and spelling.

1.4 Purpose Statement

The study had three main purposes. The first was to investigate the set of language skills measures (i.e., morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence) as potential predictors of coherence in adult ESL learners' writing. A second purpose was to find out the sub-component parts of each coherence measure used in the study which might contribute in the development of a coherent text. A final purpose was to find out commonalities and differences among the measures of coherence used in the study. This would help to identify similar and different aspects of each measure, which should contribute in the development of more informed measures of coherence, and hence assessments of coherent text.

1.5 Significance of the Study

This is the first kind of study which investigated these five language skills measures (morphological, phonological, orthographic awareness, vocabulary knowledge and grammatical competence) as predictors of coherence in adult ESL learners' writing. The study is significant for two reasons. First, the findings will help language teachers and ESL learners to focus on predictors of text coherence, and to develop activities directly related to these predictors, which should lead to the production of more coherent text.

Second, the study will investigate the contribution of sub-component parts of each measure of coherence, which will lead to a better understanding of the construct of coherence and its assessment. The analysis of these sub-component parts may lead to the identification of the most important components that contribute to coherence assessment. In turn, this may allow teachers and students to teach/practise the formative components of these skills and thereby increase the likelihood of producing coherent texts. Such identification of common sub-components should also support the development of more objective measures for assessing coherence. Thus, the study would add its part in the existing body of knowledge about coherence assessment of adult ESL learners' writing.

1.6 Research Questions

1. Are there relationships between the language skills measures of morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence and different assessments of coherence in adult ESL learners' writing?
2. What is the level of correlation among the measures of coherence used in this study?
3. Are there relationships between the sub-component parts of the measures of coherence used in this study and the measures of morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence?
4. What are the relationships between the sub-component parts of the different coherence scales and the scales themselves?

1.7 Organisation of the study

The thesis has been divided into 8 chapters that provide details about each step of the study. Chapter One is the introduction that outlines the background to the study. Chapter Two is about the main topic of the study, coherence. It begins with the general definitions of coherence and then moves to discuss the related terms of cohesion and unity that are sometimes mistakenly considered as coherence and, finally, clarifies the differences amongst these terms. In addition, this chapter also discusses the theoretical construction of coherence. Some researchers consider the development of a coherent text as the sole responsibility of a writer, whereas another school of thought considers that because the reader is a consumer of the text, interpretation of it will depend upon the reader and their ability to infer the correct meaning from the text. Finally, the chapter discusses the importance of sentence-level coherence that will support paragraph- and text-level coherence.

Chapter Three outlines the development of text linguistics up to the present day. It explains the development of different compositional theories, such as product-and-process based theories for text analysis, and illustrates the distinction between them. It concludes by laying down the basis for adopting the product-based approach to text analysis since the present study involves the textual analysis of coherence of adult ESL learners' writing.

Chapter Four discusses the selected measures of coherence used in the present study. Four different measures of coherence were chosen and applied following a product-based approach for text analysis. The chapter illustrates the differences between these measures in terms of the ways they assess coherence. It describes the validity and reliability of each measure, as well as the findings of the previous studies

that used them, in order to explain the reasons for the selection of these measures as part of the present study.

Chapter Five discusses the set of language skills used in the study. These were measures of morphological, phonological, and orthographic awareness, as well as assessments of vocabulary knowledge and grammatical competence. The chapter defines these terms and describes their contribution to the development of language learning, particularly for writing. The chapter also reports previously documented literature, focusing on the role of these skills in language learning and, also, for the purpose of subsequent comparison with the findings of the present study in discussion chapter Eight.

Chapter Six discusses the methodology used to carry out the present study and describes the population and the data collection process of the study. This chapter also details how the data were collected from the participants in terms of selection of participants and the procedures for test administration.

Chapter Seven presents the findings from the study in relation to proposed research questions, as outlined in Chapter One. The correlations were conducted in order to find out the relationship between language skills measures and coherence measures used in the study. Correlations were also conducted between the measures of coherence in order to find out the level of relationship between the measures, as well as to find out the sub-component parts of each measure associated with coherence.

Finally, Chapter Eight discusses the significance of the findings and the plausible reasons for these. The chapter also highlights the limitations of the study not

only to better understand the findings but also, more importantly, to suggest further research directions to increase understanding of the process of coherent text writing.

CHAPTER TWO

COHERENCE

2.1 Introduction

This chapter focuses on coherence, the pivotal exploration of this study. Beginning with the general definitions of coherence, the chapter then clarifies three different writing skills: coherence, cohesion and unity which are often erroneously considered to be the same. The chapter also discusses the theoretical construction of coherence. Some researchers consider developing a coherent text as the sole responsibility of the writer. A writer is supposed to embellish the text with all necessary grammatical and compositional features to form a coherent text. Other researchers consider reading to be an interaction between the writer and the reader, positing that the reader, as a consumer of the text, interprets it and thereby completes it. If the reader is able to extract the intended meaning from the text, it is considered coherent. Finally, the chapter discusses the importance of sentence level coherence to reach up to paragraph and text level coherence.

2.2 Coherence

Bain's (1890, p. 417) assertion regarding paragraph structure, "The bearing of each sentence upon what precedes shall be explicit and unmistakeable," proved one of the key impetuses behind the growing studies on composition. Bain's assertion on how to teach and learn a well-knitted coherent text was followed by many scholars and teachers until fairly recently. For example, Emig (1982, p. 94) defined coherence as, "coherence is a matter of putting the selected material in the right order with the right connectives".

Coherence is deemed to be one of the most important qualities of writing (Attelisi, 2012; Bamberg, 1984; Crossley & McNamara, 2010). It is known as ‘sine qua non’ (a thing that is absolutely necessary) in written discourse (McCulley, 1985). Richards and Nunan (1990, p. 104) state that coherence is “an essential practical construct in describing the quality of written discourse”. Its centrality can also be gauged by the fact that it is present in every test of English in which learners’ proficiency is assessed. For example, in TOEFL (Test of English as a Foreign Language), and IELTS (International English Language Testing System).

Nevertheless, in spite of its centrality in language learning, particularly in writing, coherence remains a fuzzy and abstract concept to the most of ESL and EFL teachers, many of whom are unable to define and practise coherence in their classrooms (Barabas & Jumao-as, 2009; Lee, 2002b). One consequence of this lack of agreement and understanding of coherence is that a great number of ESL/EFL learners struggle to produce texts which satisfy their teachers but often end in frustration.

Moreover, several researchers maintain that coherence appears to be subjective by nature (Garing, 2014; Van Dijk, 1977; Williams, 2012) and, therefore, without objective assessment, the issue of coherence remains complex. While many teachers find it easy to help students identify their grammatical, spelling and mechanical errors by virtue of their objectivity and concrete forms, most of them find it difficult to help students identify why their texts are judged as incoherent due to its abstract and subjective nature. Additionally, some studies show that because of this subjectivity, it is difficult to achieve the same interpretation and marks for coherence of the same text when assessed by different raters, thereby adding to the confusion and frustration

among learners (Almaden, 2006). Nevertheless, reasonable agreement amongst raters is possible to achieve (Van Dijk, 1985).

To summarise at this point, due to the subjective nature of coherence and unavailability of objective measures, most of ESL/EFL teachers feel it is easy to teach and assess mechanical and grammatical errors and provide feedback to students about them while avoiding the issue of coherence. One consequence of this approach among ESL/EFL learners is that they may regard a good command over grammar and mechanics as the key to producing a well-written text (Leki, 1996). Undoubtedly, while the teaching and learning of grammar and mechanics is crucial to learning to write English, these alone do not help learners to produce a coherent text (Stern & Solomon, 2006).

Teaching of grammar and mechanics leads ESL/EFL teachers to focus, consciously or unconsciously, on sentence level skills such as vocabulary learning, spelling memorisation, and syntactic accuracy. The emphasis on these primary skills, however, can lead to the neglect of discourse level skills of writing such as organisation, planning, revision and thematic development and may be one of the main reasons why many ESL learners produce incoherent texts. As Johnson, Mercado, & Acevedo assert that the teaching and practising of high order compositional skills are equally important as all primary sentence level skills for writing composition (Johnson et al., 2012).

Brostoff (1981) proposed that all issues related to coherence will be solved if there is a clear definition of coherence. This proposal while wholly worthwhile has proven extremely difficult to put into practice. Yet, as Grabe and Kaplan (1996, p. 76) assert, “defining the concept of coherence in some manageable way seems to be crucial to any understanding of how texts are constructed.”

Generally, coherence is considered as the semantic unity of the text that binds the whole text together as a single unit of meaning which according to Knoch (2007) is the end purpose of every communication. De Beaugrande (1981, p. 85) explained it as the “continuity of sense is the foundation of coherence, being the mutual access and the relevance within the configuration of concepts and relations”. Thus, a coherent text has a smooth flow of ideas in which one sentence logically follows the next sentence without any divergence from the main idea. By contrast, an incoherent text does not convey proper sense or meaning, there is no logical progression and connection among the sentences, paragraphs and the whole text. As a result, the reader or listener does not understand the content or message clearly and is unable to infer the exact meaning of the text.

Various studies show that different textbooks and composition books provide ambiguous or even sometimes misleading definitions of coherence (Johns, 1986; Johnson, 1992). Some of these textbooks define coherence narrowly as cohesion which has explicit links in the text to join the whole text together. But this idea has been criticised in several studies. Many studies have differentiated between coherence and cohesion claiming cohesion as the effect of coherence, not the cause, and proceed to treat them separately (Bamberg, 1984; Brostoff, 1981; Crossley & McNamara, 2010; Fitzgerald & Spiegel, 1986; Lee, 1998; Watson Todd et al., 2007).

Attempts have been made to define the different characteristics of coherence which help increase understanding of ‘coherence’ as a multi-faceted concept. Some of the main features of coherence will be discussed in the rest of the chapter, highlighting different aspects of and clarifying the meaning of the term.

2.3 Coherence and Cohesion

The concept of cohesion was introduced by Halliday and Hasan (1976) in their influential work *Cohesion in English*, in which they introduced systematic means of text analysis. They introduced two main types of cohesion, grammatical cohesion and lexical cohesion which were further divided into subcategories. Grammatical cohesion consists of conjunction, reference, ellipsis and substitution, whereas lexical cohesion was divided into reiteration and collocation. Conjunction is a word that joints two words, clauses or sentences together such as *and*, *but*, and *if*.

Example:

He has invited me on the party *but* I do not want to go.

Grammatical reference is the relationship between a grammatical unit (usually a noun or pronoun) with another grammatical unit in the text, also usually a noun or pronoun such as the relationship of ‘Sara’ with ‘her’ and ‘she’ in the following example.

Example:

‘Sara knew that her essay contained some errors but she cloud not find them.’

Ellipsis is the omission of a linguistic item from the text that is obvious in other part of the text and thus can be understood.

Example:

‘I like apples but not bananas’.

In this example, the writer or the speaker says they like apples but do not like bananas. Although the second sentence after ‘but’ does not have the word of ‘like’ (which has been ellipted), the reader or listener can understand because of its relationship with other sentence. In substitution, a word is replaced by another. For example, *one*, *so*, or *do*.

Example,

A: Which apple would you like to have?

B: That one.

In this example, in the speaker’s response, the word ‘apple’ has been substituted with ‘one’.

The above examples demonstrate that grammatical cohesion depends upon grammatical links in the text and helps with the interpretation of one textual element with another element or other elements that exist in the text. These four grammatical devices i.e., conjunction, reference, ellipsis and substitution are used to refer the text back and forth to link it together.

Lexical cohesion is manifested through vocabulary. In ‘reiteration’ either the same lexical item or its synonym is used to connect the text together, whereas ‘collocation’ refers to the frequency of a lexical item occurring with other lexical items.

The prime objective of Halliday and Hasan (1976) in *Cohesion in English* was to investigate the connections between sentences and paragraphs, asserting that there are linguistic cues in the text that hold the text together and help the reader to comprehend. They further asserted that these textual links give text a ‘texture’. Texture

here refers to the systematic links which contribute to the total unity of the text, and differentiates it from just being a random collection of sentences in isolation. These systematic links are created through cohesive links, using grammatical and lexical cohesion which, in turn, provide a proper shape to the text as opposed to a jumbled composition devoid of meaning.

Notably, cohesion is involved in the linking of linguistic items and does not deal with the semantic aspect of the text. Halliday and Hasan (1976, p. 26) clearly state that cohesion is not concerned what a text means but rather “how the text is constructed as a semantic edifice”. This statement clarifies that cohesion deals with the surface links of the text and it is not concerned with semantic unity and, therefore, that cohesive links may or may not help in the development of semantic meaning. Indeed there is a weight of linguistic consensus that it is the coherence and not cohesion that helps develop the semantic aspect of the text.

Generally, putting cohesion and coherence together presents learners with the difficulty of differentiating between the two. Since cohesion deals with the more obvious language forms (which are not abstract like coherence), most of ESL teachers and textbooks prefer to teach and practise cohesion rather than coherence. However, theories of cohesion and studies about the relationship of coherence and cohesion from other disciplines (such as Cognitive Psychology, Artificial Intelligence and Linguistics) have drawn a clear demarcation between the two (Bamberg, 1984; Brostoff, 1981; Fitzgerald & Spiegel, 1986; Johns, 1986; Lee, 2002b; McCulley, 1985; McNamara, 2001; Witte & Faigley, 1981).

In the field of cognitive psychology, schema theory has gained prominence in recent decades. This theory maintains that the understanding of a text is an interactive

process between the text and the reader. During the reading process, the background knowledge of the reader (which is called 'schema') helps the reader to comprehend and predict upcoming events (Miller & Kintsch, 1980). For example, proper description of a restaurant, school or supermarket helps the reader to trigger his/her own background knowledge. Thus, if the writer has inscribed proper background knowledge as per the reader's schema, the reader is able to comprehend the connection in the text enabling communication to take place more easily. This shows that coherence is not internal or intrinsic to the text only, but rather it emanates from the successful interaction between the reader's previous knowledge and the information available in the text. However, cohesion is the textual quality which has nothing to do with any source or stimuli outside the text such as reader's schema. In effect, it demonstrates that coherence is broader than cohesion.

Empirical studies also focused on different aspects of cohesion and coherence and their influence on reading. These studies such as McNamara (2001) and McNamara et al. (2011) yielded mixed results. McNamara (2001) argued that cohesive links speed up the process of reading. In another study, McNamara et al. (2011) found that readers' prior knowledge of content and structure (purpose) of the text helped them to comprehend high level coherence with ease, rather than texts with low-level coherence.

Some other studies examined the correlation between cohesion and coherence and their impact on writing quality (Candelo et al., 2018; Fitzgerald & Spiegel, 1986; McCulley, 1985; Witte & Faigley, 1981). All of these studies found cohesive ties correlated with coherence. They also found that coherence and cohesion contributed to writing quality. However, it is worth-noting that not all types of cohesive ties have equal levels of correlation with coherence and writing quality. Among cohesive ties, lexical

cohesion showed larger correlations with coherence and writing quality. Moreover, Hoey (1991) asserted that not the quantity of ties but the combination of ties is significant. Witte and Faigley (1981) also supported that increasing the number of cohesive ties did not affect coherence construction or reading comprehension. Furthermore, studies supported the view that cohesive links help inexperienced readers, whereas experienced readers comprehend well without cohesive links (Crossley & McNamara, 2010).

It can be concluded that although cohesion has correlation with coherence, it is neither the only feature of coherence nor sufficient on its own. Several other features contribute to the development of a coherent text – such as background knowledge. Moreover, the relationship between coherence and cohesion is not causal. Rather cohesion may be the effect of a coherent text. Coherence can stand alone without explicit cohesive links. The following example from Bamberg (1983, p. 307) illustrates this point: ‘I bought this typewriter in New York. New York is a large city in the USA. Large cities often have serious financial problems...’. Here every sentence has explicit cohesive links with other sentences. For example, ‘New York’ in sentence one and sentence two; and ‘larger city’ in sentence two and three. However, there is no semantic relation among them at sentence- as well as paragraph-level. There is not a single proposition which can stand alone for the paragraph. Consequently, due to the lack of sequential logic, the text does not fulfil a reader’s expectations.

2.4 Unity and Coherence

Often unity is mistakenly used for coherence in addition to cohesion, as outlined previously in the detailed discussion on cohesion and its relation with coherence and writing quality. This section focuses upon unity and coherence. Oshima et al. (2006)

defined unity as existing in a paragraph which “discusses one and only one main idea from beginning to end” (p. 18). Similarly, Johns (1986) defined unity as “sticking to the point.” (p. 248). Clearly both studies require that all sentences in a paragraph, and each successive paragraph in a text should cohere around a single point of theme.

One traditional way to keep unity in the text is to mention the same topic in each sentence believing that this ‘repetitive’ form of unity would make the text coherent. However, as Cerniglia et al. (1990, p. 229) point out, this is not the case. They cite the following example to illustrate the difference between unity and coherence:

‘It is very cold when it is snowing. In the winter time, it is very often cold, especially at the northern side of America. Most people need to have a coat for the winter time. It looks so pretty when it is snowing. The children like to go out to play in the snow. But not the adults because it is not safe when you have to drive on the snow to go to work every day’.

The writer of the above text seems to have thought that the paragraph is well-coherent because every sentence has the word snow in it and every sentence appears to talk about the same topic, i.e. snow. However, the writer not only does not realise that the sub-topic of each sentence is different, but also that there is no development of topic. Moreover, a new sentence does not follow the preceding sentences. Thus the reader is unable to follow the text because it does not follow any sequential form of writing, making it impossible to predict the upcoming sentence. It is, therefore, devoid of all the necessary characteristics of coherence as discussed earlier in the previous section.

In a similar vein to Oshima et al. (2006, p. 18), to Cerniglia et al. (1990, p. 229), Attelisi (2012, p. 34) argues that “unity in a text entails that every sentence in a paragraph or every paragraph in a composition should be closely related to the central topic”. Attelisi (2012, p. 34) further states that “this sort of organisation, in spite of its

importance, does not necessarily lead to coherence”. Because there are some other coherence conditions to be fulfilled, such as logical development of ideas and fulfilment of reader’s expectations. Coherence is located not only in the text, but is also the product of a successful interaction between the reader’s knowledge about the content and the text. Thus, it can be said that unity like cohesion is an outcome of coherence not the cause of coherence. Any coherent paragraph has unity of ideas but any unified text is not necessarily coherent.

2.5 Local and Global coherence

Kintsch and Van Dijk (1978) used the terms *local coherence* for sentence level and *global coherence* for discourse level coherence. *Micro* and *macro* terms are also used alternatively for the *local* and *global* coherence. Kintsch and Van Dijk (1978) maintain that each sentence contains a proposition which adds or leads into one another and thereby make a discourse level proposition. Proposition is generally known as the meaning of a sentence and may consist of a predicate and one or more argument while discourse is defined as an overall discussion of a topic whether spoken or written.

From their perspective, Kintsch and Van Dijk (1978, p. 365) further maintain that “A discourse is coherent only if its respective sentences and propositions are connected, and if these propositions are organised globally at the macrostructure level”. They consider that propositions are not just a random collection of ideas but, rather, that they are embedded in a text in such a way that each proposition overlaps others and this chains the text as a whole. For example, three sentences contain propositions (P, A, B), whereas three other sentences in the same discourse contain propositions (R, S, B). These sentences are coherent on the basis that one proposition, i.e. ‘B’, is common to, and connects, both via these propositions thereby making the discourse coherent.

The local or sentence level propositions should be connected with the overall proposition of the discourse and all these propositions should be able to be summarised as a single proposition in order to present the whole discourse level proposition. The discourse level or global proposition should be representative of all local level proposition. Accordingly, a well-coherent piece of text is the one that has both local and global level propositions together.

There are two possible approaches to assess local and global coherence: ‘top down’ and ‘bottom up’. In the ‘top down’ approach, propositions are examined from discourse level (global) proposition to paragraph and subsequently sentential proposition. This system is reversed in the ‘bottom up’ approach. In the latter, sentence level propositions are examined for paragraph and paragraph level propositions are joined to find out discourse level propositions. In both cases, however, the text is deemed coherent if all themes are logically connected to one another.

2.6 Text (writer) versus Reader based coherence

Theorists and text linguists also differ in their views about coherence in terms of reader- or writer-based coherence. Text-based group supports the view that the writer is solely responsible for producing a coherent text, whereas the reader-based group sees coherence as an interactive process between the text and the reader. These views are discussed in the following section.

2.6.1 Text (writer) based Coherence

According to text linguists such as Kintsch and Van Dijk (1978) and Lautamatti (1978), writer is deemed to be solely responsible for producing a well-coherent text. He is supposed to use all necessary coherent conditions to make the text coherent and

reader-friendly. Grabe (1984) reviewed several analytical models used for text analysis. In this very useful review, Grabe (1984) reached the conclusion that three essential interactive features are a prerequisite to every coherence model. These are (a) a discourse theme (b) a set of relevant assertions relating logically among themselves by means of subordination, coordination and super-ordination and (c) an information structure imposed on the text to guide the reader towards understanding the theme or intent of the writer. Thus, according to Grabe (1984), every writer is supposed to inscribe these features to make a text coherent.

Several studies, including those of Brostoff (1981); Johns (1986); Kintsch & Van Dijk (1978); Van Dijk (1985) have been conducted to find out the effects of logical assertions on the readers to evaluate the coherence of a text. These studies concluded that the hierarchical distribution of propositions provides a logical structure for the reader, coming down systematically from the main proposition to the subordinate proposition and so on. The main emphasis of these findings was not only on the hierarchical division of the assertions, but also on the division of these proposition on a logical basis. This logical support to assertions or themes has been deemed as one of the most important features of coherence (Connor & Lauer, 1985; Witte, 1983).

The Prague School of linguists introduced information structure to link the local themes to the discourse theme. They introduced the theme/rheme concept in order to trace out the thematic development at sentence, as well as discourse, level. The ‘theme’ is the topic of the sentence which contains information that is already known to the listener or reader whereas the ‘rheme’ part contains a new piece of information about the already known information (i.e., ‘theme’). Thus, this old/new chain of information leads the local themes of individual sentences up to global (discourse) level theme. By

putting specific information on a 'theme' or 'rheme' position, a writer provides cues to the reader about the global theme. Any sentence that does not contain relevant information about the global theme, either directly or indirectly, breaks coherence. Therefore, a writer is meant to introduce the topical development in such a way that local themes lead the reader to understand the global theme of the text (Chen, 2019).

Lautamatti (1978), following the pattern of the Prague School, introduced three main types of progressions which she deemed to be helpful in developing thematic progression within a text. These progressions are (a) Parallel progression (b) Sequential Progression and (c) Extended Parallel Progression. In Parallel progression, the same topic is discussed in successive sentences, whereas in Sequential progression, any part of a rheme within a previous sentence becomes a theme of the next or following sentence. In the Extended parallel progression, any previously mentioned topic is revised with at least after one occurrence of Sequential Progression (detailed discussion is in chapter five). Studies such as Kılıç et al. (2016); Cepni and Bada (2019) support the view that well-coherent essays use more Sequential progression than Parallel or Extended Parallel progression.

Organisational Structure is another important feature of a coherent text. Text linguists such as Bamberg (1984) emphasised that a proper structure of the text reveals the intention of the writer to the reader which may be either argumentative or descriptive, narrative or expository. The revelation of the writer's intention shapes the text in a specific way which helps the reader to follow the writer's intent as the reader finds the text structure in a familiar form. Therefore, ideally, a writer should organise his/her text in a proper structure in order to produce a coherent text (Ahmed, 2019).

Thus, topical development, logical ordering of proposition and organisation were identified as some of the textual features of a coherent text. Every writer is supposed to follow these features to fulfil readers' expectations of a coherent text. The more the writer embeds these features in the text, the greater the coherence text will be.

2.6.2 Reader based coherence

On the other side, there are researchers and linguists who consider reading an interactive process between the writer (text) and the reader. They maintain that since a reader is the consumer of the written product, there must be an emphasis on the reader's part in coherence. De Beaugrande (1981, p. 66), for example, states, "Coherence is clearly not a mere feature of texts, but rather the outcome of the cognitive process among text users". Similarly, Hoey (1991, p. 12), views coherence from the reader's point of view stating that coherence is, "a facet of the reader's evaluation of the text". These statements centre the reader's evaluation of the text as the degree to which the text is coherent. If the reader says, "I follow you. I see what you mean." (Jacobs, 1982, p. 11), the text is categorised as a coherent text. But if the reader is unable to infer the meaning from the text, it is considered as incoherent.

The reader-based coherence is, in fact, a multi-disciplinary theory developed from psychology, artificial intelligence, and linguistics and has its roots in schema theory. Schema is defined as a mental picture based on one's prior knowledge of the world which helps in perceiving new information and sets them in the existing storage of mind. Schema theory states that coherence depends on the successful interaction between the reader and the writer (Rumelhart, 1994). The successful interaction largely depends upon the selection of reader-centred schemata by the writer. The more the

schema is related to the reader's prior knowledge in terms of the content as well as the form, the more coherent text will be (Miller & Kintsch, 1980).

During the reading process, a reader develops a conceptual or mental frame in which he/she predicts the next event. If the writer has skilfully and logically woven each event to follow one after the other, the reader may find expectations fulfilled and can interpret the text. Moreover, if the sentences are linked with one another, the reader would be able not only to interpret the text, but also to summarise it in a single proposition. These qualities are, according to Kintsch and Van Dijk (1978), essential to any coherent text.

Reader based coherence yields that possibly a text may have several interpretations depending upon the proficiency of the readers. Skilled and unskilled readers may interpret the text differently depending upon their prior knowledge about the text. Moreover, their background knowledge, cultural differences and first or second language may also affect the interpretation of the text. Therefore, the responsibility not only lies on the writer to produce a reader-friendly text, but also on the reader to be familiar with the writer's culture and language.

In addition to the non-linguistic features of writing as discussed, a reader is supposed to learn linguistic knowledge of the basic grammatical rules of the language such as morphology, syntax, vocabulary to infer the hidden message in the text. They should also learn discourse features such as cohesive links, thematic progression, and organisational structure so that he/she can grasp the meaning of the whole text. Since reading and writing form an interactional process, reading skills may help developing good writing skills and vice versa (Liu et al., 2019; Plakans et al., 2019).

Several studies have investigated the differences in the achievement between skilled and less-skilled readers when faced with reading coherent and incoherent texts having with and without prior knowledge of the same text (McNamara, 2001; McNamara et al., 2011). Findings revealed that skilled readers are able to interpret and summarise the less-coherent text with and without prior knowledge of the texts unlike less-skilled readers who benefit only from highly-coherent texts. McNamara's studies (2001, 2011) strongly support the view that along with a skilled writer, a reader is also supposed to have necessary skills to interpret the text.

Some other studies such as Brostoff (1981), Johns (1986), and Lee (2002a), attempted to develop learners' reader-awareness in order to develop a reader-friendly coherent text. These studies developed special activities the aim of which would potentially enhance reader-awareness. Most of these activities focused on non-linguistic aspects of writing such as intent of the writer and proper organisation. Findings revealed that such activities helped students to produce a reader-friendly coherent text.

To summarize the discussion about text and reader-based coherence at this point, it can be concluded that coherence is a multi-facet phenomenon involving an interaction between the text and the reader. That is, the interpretation of a coherent text depends on both the writer and the reader. Therefore, the teaching and learning of coherence should include both aspects of coherence i.e., the text-based features of writing, and reader-based features of coherence.

2.6.3 Summary

This chapter has explored the complex and multi-faceted term ‘coherence’ and has demonstrated that in spite of its centrality to the process of writing, the concept remains problematic in terms of teaching and analysis, particularly in the ESL context. In part this is due to the fact that coherence is still considered an abstract and fuzzy idea, and in part because of its subjective nature. The studies of Almaden (2006) and Williams (2012) found that the teaching and rating of ESL students’ work was particularly affected by the lack of clarity that surrounds this concept as well as the subjective nature of the marking used by raters. Due to this lack of clarity and consensus, there persist several definitions and interpretations of coherence. As outlined previously, cohesion and unity are erroneously ‘bracketed’ as coherence which in fact, are the effects of coherence and not the cause of coherence. A text can be coherent without being cohesive, whereas unity alone does not make a text coherent. A coherent text is one in which the logical development of ideas are semantically linked with one another locally as well as globally with the proper illustrations and explanations of the concepts which provide a sense of completeness to the reader.

CHAPTER THREE

TEXT LINGUISTICS

3.1 Introduction

Building upon the above chapter two exploring coherence, chapter three reviews the definition and placement of Text Linguistics in the field of Linguistics. Moreover, the main composition theories of writing will be discussed in detail which will provide a theoretical foundation for the present study. The chapter proceeds to cover the approaches to text analysis which will further help in understanding the theoretical framework for this research.

3.2 Text Linguistics

There are different views about the placement and relationship of Text Linguistics in the field of Linguistics. Generally, it is discussed as a branch of Discourse Analysis, which deals with studies related to language use, particularly spoken language use (Wu, 1997). However, Text Linguistics focuses more upon written-text than spoken language analysis. Both Discourse Analysis and Text Linguistics analyse the communicative purpose of language. This has led some researchers, such as De Beaugrande (1980), to view them as two different names for the same domain of academic investigations.

The roots of Text Linguistics can be traced back to classical rhetoric of Greece and Rome (De Beaugrande, 1981; Van Dijk, 1985). The basic purpose of classical rhetoric was “training public orators” (De Beaugrande, 1981, p. 15) to deliver persuasive speech. The pattern of training was very much similar to Text Linguistics. The focus was given on the generation, arrangement and presentation of ideas in such

a way that it could communicate the message without any divergence from the main idea. In the same way, in Text Linguistics, the emphasis is on the communicative purpose of the text beyond the sentence level; i.e., across the whole text.

The impetus behind the evolution of Text Linguistics was the shift from word and sentence level analysis up to text level analysis. It is because the people do not communicate by means of individual words or sentences in isolation (Smith, 2018). It is the context which shapes the meaning of a text. Therefore, it was emphasised that the whole communicative purpose of a text should be analysed in a specific context of the text. Halliday and Hasan (1976) and Van Dijk (1985) introduced the concept of '*local and global coherence*' and '*micro and macro structure*' of the text to analyse the communicative role of individual sentences in the whole text. Here 'local and micro' are used for the meaning of an individual sentence whereas 'global and macro' refer to the overall meaning of the text.

According to Halliday and Hasan (1976, p. 1), "a text is a unit of language in use; not a grammatical unit, like a clause or sentence, and not defined by its size". Rather, it is regarded "as a semantic unit: a unit not of form but of meaning" (Halliday & Hasan, 1976, p. 2). Defined and understood as such, any text that does not give proper sense or meaning is not a text at all. Therefore, according to Halliday, in any written piece, a unity of meaning is perceived to be the essential criterion of a proper text.

According to Crane (2006), texture creating implicit and explicit links in the text, embeds meaning in the text. Any text that lacks texture is simply be a collection of random sentences devoid of meaning. The latter kind of text has chunks of sentences that are irrelevant having no connection with each other. Addressing texture and how it is achieved, Crane (2006) refers implicit links at paragraph level of the text as

‘coherence’ and refers to the explicit links at sentence level to as ‘cohesion’. These two properties of text make it a semantic unit which has a proper sense and conveys an appropriate meaning (Brostoff, 1981) and this proper sense and meaning has been called ‘texture’ by Halliday and Hassan (1976).

3.3 Composition Theories

The investigation of texture or meaning in the text led the text linguists referenced above to two different theories of text analysis: ‘Text as Product’ and ‘Text as Process’ which differ because of their individual primary focus, i.e. one on a particular element of ‘production’ and the other on the ‘process’ of writing. Both groups strongly believed that the discovery of their intended objectives would help learners to practise these features and thereby produce well written texts. These theories will be discussed in the following section.

3.3.1 Text as Product

The Text as Product approach emerged with a very influential and ground-breaking article of Kaplan (1966), ‘Cultural thought patterns in intercultural education’. After reading hundreds of essays written by non-native learners of English, he found a striking difference in the compositional patterns between native and non-native learners of English, especially in their organisational structure of the composition. Kaplan (1966) found that although the non-native speakers’ composition was different from native speakers of English in terms of clause structure using lengthy clauses, or information structure, they were not wrong at all. Having seen all these texts he concluded that in spite of having mastery of the English language rules and regulations, paragraph development differs due to a culture’s specific rhetorical traditions. Writers

are heavily influenced by their own cultural thought patterns which, in turn, affect their style of composition. Kaplan's views led to the development of the field of 'Contrastive Analysis'. Researchers in this field were interested in identifying differences in textual features written by L1 versus L2 writers. For example, Fitzgerald and Spiegel (1986) studied how native and ESL writers of English differed in writing the 'Introduction' of their composition. Later, Almaden (2006) and Fan and Hsu (2008), and O'reilly and McNamara (2007), studied how L1 and L2 writers introduced given and new information in their texts and explored by focusing on how writers link sentences in their writing.

Kaplan's (1966) earliest concept regarding the impact of cultural differences on paragraph development was criticised by later researchers on different grounds. For example, Spack (1997) and Zamel (1997) criticised Kaplan (1966) for having a discrete view about writing on the bases of learners' cultural differences and considered it inappropriate to bear these cultural differences in mind during teaching in ESL classrooms. They viewed that cultures are dynamic and any two interactive cultures may infuse into one another at any stage. Similarly, an ESL learner can merge his L1 characteristic with L2 (English in this case) at any stage which can display a mixed genre of writing having L1 and L2 characteristics together. Thus, restricting ESL students by their cultural background and native language will be a stereotype activity. They urge teachers to assess ESL students through their current behaviour on writing rather than the limitations of their L1 or cultural background (see Atkinson 1999 for detailed discussion). Zamel (1997) also raised the concern that "teachers and researchers who see students as bound by their cultures may be trapped by their own cultural tendency to reduce, categorize, and generalize" (p. 342). Scollon (1997) viewed Contrastive Analysis focusing solely on the text for analysis while neglecting

learners' individual differences which have been found to have a great influence on learners' learning ability (see also Ardasheva, 2016).

This model of composition, referred to as 'traditional rhetoric' or 'current traditional rhetoric' (Berlin, 1982; Emig, 1982), places emphasis on the teaching of a set traditional forms of writing. The finished product is analysed for the understanding of textual features, rather than investigating the process that the writer used to produce these features. The understanding of the connections between sentences, paragraphs and the whole text is made by the careful examination of the product without scrutinising the process of writing the writer has passed through. The exemplary models of this approach are the cohesion model of Halliday and Hassan (1976) and the model for coherence by Bamberg (1984).

Witte and Cherry (1986) stated that in the product approach researchers studied product by either focussing on syntactic features or the overall text. Halliday and Hasan (1976), in their influential work 'Cohesion in English', introduced the ways in which sentences of a text can be linked together. They divided cohesion into two main categories, namely: 'grammatical cohesion' and 'lexical cohesion'. Bamberg (1984) also developed a model for coherence analysis of a product (which will be discussed further later in the thesis). Moreover, Lautamatti (1978) introduced the way to analyse information structure of a written product. Thus, different researchers postulated different ways and techniques to analyse the quality of a written piece of text.

Thus, product is the primary source of investigation which is used to assess writer's proficiency either for the assessment of taught forms in the class as a test, final exam, general ability in writing or overall language proficiency tests like The International English Language Testing System which is generally called as IELTS (see

chapter four for details). Accuracy is very important in the Text as Product theory, therefore, the teaching focuses on grammar rules, mechanics, vocabulary and the set rules of composition as in a five-paragraph essay comprised of an introduction, body and conclusion. Once taught, these forms are practised several times in order to achieve an acceptable form of accuracy. Students are also taught and practise different genre of composition with their particular characteristics. The teacher plays a central role in this form of learning how to write. However, in Text as Product system the teacher assesses the finished product and provides feedback on the final product, rather than during the writing process.

3.3.2 Text as Process

The Text as Process approach is said to be a reaction against the rigidity of the Product approach according to Davis (1990). Unlike the Product approach, the Process approach considers writing as a recursive act in which a writer repeats different writing actions such as planning, writing and revision until the text is completed. In addition, writing is considered as an interactive process of communication between the writer and the reader. It is the writer's responsibility to convey the message effectively so that it can be comprehended easily by the reader. In the process approach both writer and reader are equally important.

Flower and Hayes (1981a) in their influential work on the Process approach led to a range of other researchers examining the composition process. Zamel (1982), and other researchers, amended the original ideas and stipulated their own with a slightly different perspective on the process approach. Flower and Hayes (1981) observed writing as a cognitive process with three stages: Planning, Writing and Revision.

Importantly, these stages are recursive rather than linear so that one can happen at any stage.

To begin with, Planning considers the use of internal representation of the knowledge present in writer's mind in an abstract form and which will be used in writing. Planning involves a number of sub-processes. Generating ideas is one such whereby the writer retrieves ideas from long-term memory and develops and organizes these ideas. Sometimes ideas may come in such a coherent way that the writer can put them in a sequence coherently. At other times, these ideas occur in an unconnected or distorted way and are, therefore, difficult to organize. Organizing such ideas involves not merely an ordering process, but also requires the writer to adapt and match these ideas according to the genre of assignment and audience. This process is further decided by Goal-Setting procedures whereby the writer may think: "What do I want to say?" and "What do I want to talk about next?" (Wu, 1997, p. 17). This process helps a writer to remain on topic and maintain a sequential and coherent flow in writing.

The next step is the Translation of ideas in which abstract information of language appears in written form through literacy and linguistic knowledge. As indicated above and supported by Flower and Hayes (1981) and Zamel (1982), writing is a recursive process and an individual sub-process can occur at any stage. Therefore, generating, organizing and goal-setting take place throughout the process of Translation. Importantly, if the writer has to pay conscious attention to primary writing skills, such as spelling and grammar, the performance in other processes, such as generating ideas, may be negatively influenced. This is because the mind works on both primary and higher level writing skills simultaneously and only has a certain number

of resources to accomplish both (Berninger et al., 2010; McCutchen & Stull, 2015; Zhang & Koda, 2012).

Reviewing is the process which aims at evaluating and revising the text and modifying it based on set goals. This reviewing process, like the other processes in the model, is recursive and not necessarily only the last part of the writing process. While planning, a writer may revise the goals, evaluate them and again may repeat the process until the end.

The writing model of Flower and Hayes (1981a) proved to be an impetus for studies both in L1 and L2 writing. Researchers attempted to find out the differences between novice and experienced writers across all stages of the model. For instance, it was found that having mastery over primary writing skills leads to less onus on working memory, which in turn enables writers to focus on higher writing processes such as planning and revision (Dunsmuir & Blatchford, 2004; Morris & Cobb, 2004). In addition, novice and expert writers differed in their use of processes such as planning (Cumming, 2001). Novice writers often focus on immediate context, while experienced writers kept the overall goals of composition in mind (Bereiter & Scardamalia, 2013). Furthermore, it was also found that novice writers focus on spelling, grammar and mechanics while revising their composition (Perl, 1979), whereas experienced writers placed emphasise on organisational pattern and the communicative part of their composition which, as a consequence, helped them to develop a highly coherent text (Hayes & Chenoweth, 2007).

Contrary to Text as Product theory, the writer rather than the teacher is the central figure in the learning process. For example, peers can become involved in the process and provide feedback to the writer at any stage of writing, rather than at the end

of the finished product. Instead of practising the taught form in the classroom, the writer is more likely to produce several drafts to give a proper shape and meaning to a final draft. However, unlike the product model, the process model ignores the mechanical side of composition as well as information about different genre of writing composition.

Though both The Product and The Process theories of composition seem different from one another in terms of perspective, neither can be said to be right or wrong. Rather, both theories are simply different approaches to the teaching and learning of composition. Davis (1990) conducted a study to determine which approach was more conducive to producing a well-coherent text. He concluded that the combination of both approaches was more likely to lead to a well-coherent composition. In addition, he considered these approaches similar to Krashen's (1982) theory of 'learning' and 'acquiring' language as Krashen views 'learning is conscious' while 'acquisition is unconscious'.

The present study was predominantly based on the 'Text as Product' theory of composition. Therefore, features of the theory will further be discussed in the present chapter. Moreover, since the focus of this study is to analyse the coherence construction of adult ESL learners' writing, the features of coherence will be analysed in the products of adult ESL learners.

3.4 Approaches to Text Analysis

As discussed above, different theories of composition view the process from different perspective. No single theory is perfect or complete, and the differences between them provide a more holistic picture of the complex phenomena of writing composition. Similarly, linguists differ in their views about what to analyse in a written

text, providing fundamental concepts of text analysis, as well as the development in the field of Text Linguistics. Knowing about these approaches is central to understanding why there are different ways of analysing the coherence of a text, which is one of the purposes of the study. As Morgan and Sellner (1980) state, a text has at least three aspects: linguistic form, content and presentation. Therefore, the approaches to text analysis can be categorised according to these three aspects.

3.4.1 Linguistic Approach

Prior to this approach Latin grammar rules were in vogue to analyse syntactic components and their relationship in the English Language. The Latin grammar rules school of thought was, however, replaced by a group of linguists (subsequently known as Structuralists) who emphasised the systematic analysis of syntactic components of an individual language and their relationship (Wu, 1997). Primary among these structural linguists were Bloomfield, Sapir and Whorf who influenced the majority of other linguists of that era.

The syntactic components and their relationship are described by dividing the sentence into syntagmatic and paradigmatic components. The syntagmatic components are aligned horizontally whereas paradigmatic components are aligned vertically. The following example demonstrates this distribution.

She speaks slowly
quickly
softly

As can be seen, the relationship among the words, ‘She,’ ‘speaks’ and ‘slowly’ are syntagmatic while the relationship among the words, ‘slowly,’ ‘quickly,’ and

‘softly,’ is paradigmatic. This exemplifies how the structuralist linguists’ main focus was on the analysis of language at the syntactic level, an approach which, in fact, often ignored the analysis beyond the sentence boundary up to discourse level.

Chomsky (1971) criticised structural linguists for this focus, asserting that they merely labelled and classified the linguistic components and totally ignored the important fact that language is natural and instinctive to all human beings. All human beings have not only the ability to learn language, but also to produce some new forms within the language previously unheard. He believed that all languages are rule-governed and differentiated between ‘competence’ of a language and ‘performance’. The former, he categorised ‘deep structure’ and the latter as ‘surface structure’. Deep structure is the abstract form of grammar in one’s mind, used to generate and transform the language in a concrete form at the surface level, which can then be heard and read. Thus, ‘surface structure’ is the concrete representation of language which was in ‘deep structure’ in abstract form.

Chomsky’s (1971) theory of ‘Transformational-Generative Grammar’ introduced Phrase-Structure Rules and Transformational Rules in order to describe the syntactic relationship among its different parts. Phrase-Structure Rules describe the relationship among the component parts of a sentence at phrase level while Transformational Rules explain how one kind of sentence can be transformed into another form of sentence at deep level with the help of internal grammar rules in the mind. The following examples illustrate these points.

Example 1:

Figure 3.1 Chomsky's Phrase Structure rules

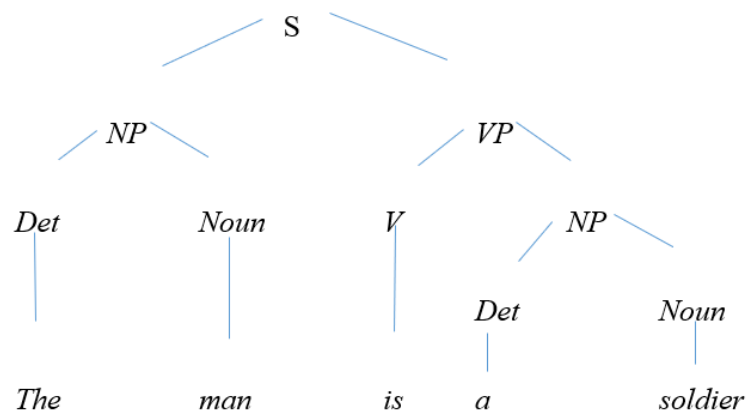


Figure 3.1 illustrates Chomsky's Phrase Structure rules. The top 'S' refers to sentence that has two phrases. Noun phrase on the left side whereas verb phrase on the right side. Noun phrase further has determiner 'the' and a noun 'man' whereas verb phrase contains verb 'is' and noun phrase that further has determiner 'a' and noun 'soldier'. Working in this manner, phrase structure rules combine to develop sentences.

Example 2:

$$NP + be + NP \quad \rightarrow \quad be + NP + NP ?$$

1. The man is a soldier \rightarrow Is the man a soldier?

(S= Sentence, NP= Noun Phrase, VP= Verb Phrase, Det= Determiner, V= Verb)

Example 2 illustrates generative rules which, with the help of certain grammatical rules, help generate new sentences. For instance, in the above example a simple affirmative sentence 'The man is a soldier' has been transformed into an interrogative sentence 'Is the man a soldier?' by replacing auxiliary verb 'is' in the

beginning of the sentence. Similarly, other forms of sentence such as negative sentences can be formed.

Although Structuralists and Transformational Generative Grammar linguists added valuable theories and models of language analysis to the field, it is worth-noting that they mainly analysed text at the syntactic level and generally ignored the discourse level. Moreover, these linguists also neglected the semantic aspect of language analysis. However, since this approach of text analysis is not directly related to the present study, it is noted but will not be discussed further.

3.4.2 Propositional Approach

Unlike the Linguistic approach to text analysis, the Propositional approach analyses text not only at sentence level but beyond the sentence boundary up to the discourse level with the primary focus on the content analysis of the text. This approach to text analysis was principally based on ‘Case Grammar’ by Fillmore (1977) and ‘Semantic Grammar of Proposition’ by Grimes (1975) and, subsequently, substantially contributed to by the linguists like Kintsch and Van Dijk (1978) and Van Dijk (1980).

In Case Grammar, Fillmore (1977) replaced Chomsky’s syntactic structures of a sentence into semantic deep structures, which is considered a substantive modification to Generative Grammar as it incorporates an element of meaning along with structure. In Case Grammar, a case is simply defined as the semantic relationship of a noun or pronoun with other words in a sentence which determines its role in a sentence and may have subjective case, objective case, direct or indirect object.

A proposition is the unit of analysis in the Semantic Grammar of Proposition. A proposition is simply the meaning of a sentence and may consist of a predicate and

one or more argument according to Van Dijk (1985). A predicate may be a verb, an adjective, adverb or connectives while an argument may play different roles such as agent, object or goal. A proposition is that part of the meaning of a clause or sentence which is constant, despite changes in such things as the voice from active to passive. A proposition may be related to other units of its kind through inter-propositional relations, such as temporal relations and logical relations (Van Dijk, 1985).

Kintsch and Van Dijk (1978) further postulates that text is not just a list of propositions in a disorganised way. Rather, propositions are represented in an organised and hierarchical structure. Within this, higher level propositions are better recalled than those at a lower level (Meyer, 1975). In addition to hierarchical structure, the propositional approach also stressed the unity of micro and macro level propositions of the text. Micro level propositions may be coherent but not necessarily give a macro level proposition. Therefore, in order to have a semantic unity, all micro level propositions must produce macro level propositions.

The following example illustrates the concept of proposition in a sentence.

- Alice eats the apple
- The apple was eaten by Alice
- Does Alice eat apple?
- Alice, eat the apple

All the above utterances have one predicate that is an event or state, and one or more arguments naming referents that participate in the event. Despite changing the form of a sentence from declarative to interrogative and changing voice from active to passive, still:

- The activity is eat.
- The agent is Alice.
- The patient is apple.

3.4.3 Functional Approach

Whereas the focus of the Propositional approach to text analysis is on the semantic analysis of the text, the Functional approach mainly assesses the way in which text is produced in order to provide communication. Basically, this approach assumes that the different positions in a sentence have different effects on the reader. For example, the placement of a noun on a subject position differs from when it is positioned on an object. This provides the writer with options to give the reader a specific sense about the importance of something.

Mathesius is considered to be the first linguist who divided the sentence into theme and enunciation. He stated that ‘theme’ is defined as what ‘the whole sentence is about’ while ‘enunciation’ focuses on ‘the theme’. Firbas (1964) replaced ‘enunciation’ with ‘rheme’ and claimed that it is ‘rheme’ that contributes more in communicating message. Furthermore, the Prague School linguists introduced the idea of a ‘given/new’ information structure which is equal to the concepts of theme/enunciation and theme/rheme. They explained that the ‘given’ part always contains information which is already known to the reader whereas the ‘new’ part shares new information about the ‘theme’ which carries forward the conversation or communication. Both Firbas (1964) and the Prague School linguists agree that in a text the ‘rheme’ plays a pivotal part in conveying the message.

Building upon the idea of theme and rheme, Lautamatti (1978) developed ‘Topical Structure Analysis’ in order to analyse functional aspects of a text. She introduced three main kinds of progressions each of which conveys message in a different way and leading to each kind of progression having a different effect in the text. These progressions are ‘Parallel Progression’, ‘Sequential Progression’ and ‘Extended Parallel Progression’. In Parallel progression, the same subject is used in consecutive sentences and gives depth to the topic. In Sequential progression, any part of the ‘rheme’ becomes the subject of the next sentence and broadens the topic. In Extended Parallel Progression, any previous topic is used again after at least one occurrence of Sequential Progression.

The following example sentences (separated by slashes) illustrate how topics are added.

Example:

***Shakespeare** is a great figure in English playwrights // **His plays** rank the highest among all due to the natural depiction of human nature in the **characters** // **All those characters** seem alive and of the present age when we read or watch the play.*

The bold words indicate how one part of a sentence either from theme or rheme becomes the part of a sentence and thus develops a text. As it can be seen that the topic of the first sentence that is ‘Shakespeare’ is used as the topic of the second sentence ‘his plays’. In the same way the last part of sentence contains ‘characters’ and again as a topic of the new sentence ‘all those characters’. This way of combining of new and old information, either from theme or rheme part of sentences, helps carry forward the text.

The present study was predominantly based on the Functional approach to text analysis with its main focus investigating the features used by the writer to develop textual coherence. Since the purpose of the study is to analyse the coherence construction in adult ESL learners' writing, the study will also touch upon the propositional approach to text analysis wherein the main focus is on the relationship between local and global coherence.

3.5 Summary

The chapter progressed to discuss the three main approaches to text analysis: form, content and presentation. Linguistic approach for text analysis places stress on the analysis of form of the language believing it sufficient to understand the textual features of the language. It was observed that although this approach developed some fundamental concepts of syntax analysis which contributed substantially to text analysis, overall this approach, because it lacked semantic analysis, could not analyse beyond the sentence level.

The chapter then proceeds to explore how the Propositional approach, with its emphasis on semantic analysis of the text, filled this gap. This approach not only analyses at a sentence but also lead to analysis at a discourse level and introduced the concept of 'micro' and 'macro' level propositions. Thereafter, the chapter considered the Functional approach to text analyses. This laid stress on the presentation of information and the effective way this is embedded in the text to the benefit of the reader. This approach was also discussed in terms of the concept of 'theme' and 'rheme' and how these contribute to differentiating between given and new information in a sentence.

Ultimately, the chapter concludes that all of these theories and approaches have contributed to the development of Text linguistics and that although different in various ways, none are exclusive, or right or wrong. Since the present research is based mainly on 'the Text as a Product theory' it will focus largely on the Functional aspect of the text drawing upon these several theories and approaches where appropriate.

CHAPTER FOUR

MEASURES OF COHERENCE

4.1 Introduction

This chapter discusses/introduces the coherence measures that were used to analyse the written essays in the present study. Given the view covered in chapter 2 that coherence a relatively subjective, perhaps ill-defined concept, it was decided that more than one measure of coherence should be applied in order to investigate relationships between this construct and the language skills measured in the study: i.e., the language skills of morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence. To provide a range of assessments of coherence, four measures were employed in the analysis of the essays. These measures were selected on the bases of their theoretical background, validity and their use by previous researchers in their studies.

Difference in the components of analysis across the four measures also provided an opportunity to explore potential underlying constructs of coherence. Commonalities or relationships among components can be particularly important for teaching and learning coherence as a more concrete construct, rather than a fuzzy or abstract concept. Differences in the four coherence measures derive from variations in current theories of coherence (see chapter two). However, such theories do overlap to some extent, meaning that there will be some commonalities as well as differences among the measures, and for there to be a reasonable level of agreement in terms of the levels of coherence determined by the different measures (see Van Dijk, 1985).

4.2 Rationale for the selection of measures of coherence for the study

The first measure that was selected for the present study to analyse coherent text of the participants was IELTS measure. IELTS measure was chosen to analyse students' written essays for coherence because of its importance as a high stake test across the globe, particularly for those who did not learn English as their first language or mother tongue. Thousands of people sit the IELTS test either to get admission to an education course or for immigration to an English speaking country. Though there are some other English language tests that are accepted across the globe, IELTS is one of the most widely accepted amongst all. A second reason for its selection is that, since the development of the measure, it has been regularly reviewed by specialists to make its constructs more relevant, clear and easy for raters to analyse writing ability, including coherence. Importantly, it is specifically used for candidates who learn English as an additional language. As the participants of the present study were also adult English as an additional language learners, the rubrics should suit the present study. The IELTS measure has also been used to analyse different genre of essays (such as argumentative, narrative or descriptive) which also made it suitable for the study.

The second measure was the Holistic Coherence Scale (HCS) developed by Bamberg (1984). This measure is one of the earliest measures developed specifically for coherence analysis. Bamberg (1984) developed this measure based on the existing theories of coherence, such as these by Halliday and Hasan (1976) and Van Dijk (1977). Despite being developed for coherence analysis of adult native speakers of English, it has also widely been used for the coherence analysis of adult English language learners. The measure was also chosen because unlike other measures of that time which either describe text as fully coherence or incoherent, the Holistic Coherence Scale described

coherence in terms of degree, on a four point scale with 4 indicating the highest degree of coherence. Moreover, along with analysing coherence holistically, the Holistic Coherence Scale has the feature of allowing the user to analyse textual coherence via the scale's sub-components. The Holistic Coherence Scale has also been used for coherence analysis of different genre of essays, which also makes it a good choice for this study. The measure was also chosen to allow a combination of reader-based versus text-based measures of coherence to be used in the study. According to Watson Todd (2016) this measure is more reader-based as compared to text-based measure of coherence (see chapter two for detailed discussion on text and reader-based measures).

The third measure in this study was the Topical Structure Analysis (TSA) developed by Lautamatti (1978). Based on the work of Prague school of Linguists that introduced topic/comment analysis of a sentence to analyse topical development of a text, Lautamatti (1978) introduced three basic types of progression for coherence analysis. These progressions are Parallel progression, Sequential Progression and Extended parallel progression. All these types of progressions have their role in the development of coherence and are suggested to be used in a certain proportion. Later on, Unrelated progression was introduced which notifies coherence break (Knoch, 2007). In other words, it is a kind of progression that has no link with other progressions of the text and considered as a deviation from the main topic. This measure has also been used for different purposes. It has widely been used for the teaching of coherence to the learners of English (Cepni & Bada, 2019) and for the teaching of revision of the text to improve topical development of the text to produce well-coherent essays (Attelisi, 2012; Witte, 1983). Different researchers have used the measure to explore the difference of topical development between learners of different cultures such as Simpson (2000) and Almaden (2006). The purpose was to know the similarities and

differences among the English learners of different cultures particularly native and non-native speakers so that the differences may be focused to bring the learners at par with the native speakers. Similarly, the measure has been used to analyse different genres of essays with both native and non-native speakers. Importantly, although the measure is subjective in nature till the identification of the topic of the sentence, however, the measure is comparatively objective as compared to other two measures of the study that have already been described. Once topics are identified, the rest of the process such as finding out the types of progression and developing a tree diagram based on types of these progression is comparatively objective.

The fourth measure of coherence in the study was the Topic Based Analysis (TBA) developed by Watson Todd (1998). Watson Todd (1998) developed this measure on the theoretical background of cohesion developed by Halliday and Hassan (1976) and Hoey (1991) to analyse the surface connectivity of ideas in the text. This surface connectivity helps the learners to link the ideas together to comprehend the message of the text. Density of concept was taken from De Beaugrande (1981) which shows the importance of a concept. In other words, important concepts are used frequently to make the reader realise the main ideas discussed in the text (Scott, 2000).

Topic Based Analysis was chosen due to a couple of reasons. To begin with, it is comparatively a new measure than other measures of the study. Researcher thought to use the latest measure along with some old ones to make a combination of old and new. Moreover, the measure has strong theoretical background as mentioned earlier. Watson Todd (2016) has provided evidence for the validity and reliability of the measure, and it has been used for coherence analysis of learners of English as an additional language. Finally, the measure is much objective as compared to other

measures of the study because it decides the strength of a text being coherent or incoherent through mathematical division rather than raters' own judgement.

The rest of this chapter will detail each of these four measures in turn. Each measure is described in four sections. Section one provides the introduction and theoretical background of each measure. Section two covers the analysis criteria of each measure. Section three comprises a sample analysis of an essay for practical understanding of each measure. The last, fourth section discusses previous studies using the particular measure employed and their findings.

4.3 IELTS measure

4.3.1 Introduction of the measure

The International English Language Testing System (IELTS) developed into its existing form after a series of studies to revise and modify the test content, construction and assessment criteria. It dates back to 1965, when the British Council introduced the English Proficiency Test Battery for the measurement of language proficiency of the students who were interested in getting admission into the UK universities. Later, in 1980, the Battery Test was replaced with the English Language Testing Service (ELTS) after some revision (Alderson, 1991). Finally, after numerous versions, IELTS was introduced in 1989 to assess the English language proficiency of international students who aspired to start their academic careers in English speaking countries such as England, Canada, Australia and New Zealand.

Though other tests are used to assess the English language proficiency of international students seeking university admission, IELTS has become a high-stakes test (Alsagoafi, 2013). More than 7000 institutions across the globe trust and accept

IELTS testing for admission purposes. According to an estimate, more than 1.7 million candidates appear in the test every year in more than 800 recognised test centres across 135 countries (Shaw & Falvey, 2008). These figures include not only students who want to pursue higher studies in English speaking countries but also those who are interested in seeking immigration and employment in these countries.

Observing the increasing popularity and demand of IELTS test, different institutions offer online and paper-based preparatory courses to candidates to get through the IELTS test with required bands. For instance, Cambridge University Press has prepared a specimen material booklet, specifically designed for distance learners who do not wish to join any institution for preparatory courses and prefer self-study. The Cambridge booklet familiarises and prepares the candidates for the content and structure of the IELTS test.

4.3.1.1 The format of IELTS test

The test has basically two modules: Academic and General. The Academic module is for the candidates who want to be enrolled in any university course; postgraduate, undergraduate or any professional course. Whereas, the General module serves for the purpose of immigration and employment.

IELTS test basically assesses the competency of a candidate in four basic skills, i.e. listening, speaking, reading and writing. The listening and speaking tests are same for both of the modules whereas the reading and writing tests differ for Academic and General Modules. The listening, reading and writing tests have to be conducted on the same day whilst the speaking test can be taken either just after these tests, or within 7 days either before or after the other tests have been conducted.

The IELTS test assesses candidates on a scale from 0-9, which are called bands for each of the four skills: listening, speaking, reading and writing. Each band shows a competency level of the candidate which is required for different levels of courses. It ranges from 'Non-user' in band 1, to 'Expert-user' in band 9. Below is a table that describes candidates' competency levels in terms of these achievement bands.

Table 4.1: Competency level of candidates as per level of bands achieved in IELTS test.

| Band | Skill level | Description |
|---------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Band 9 | Expert user | You have a full operational command of the language. Your use of English is appropriate, accurate and fluent, and you show complete understanding. |
| Band 8 | Very good user | You have a fully operational command of the language with only occasional unsystematic inaccuracies and inappropriate usage. You may misunderstand some things in unfamiliar situations. You handle complex detailed argumentation well. |
| Band 7 | Good user | You have an operational command of the language, though with occasional inaccuracies, inappropriate usage and misunderstandings in some situations. Generally, you handle complex language well and understand detailed reasoning. |
| Band 6 | Competent user | Generally, you have an effective command of the language despite some inaccuracies, inappropriate usage and misunderstandings. You can use and understand fairly complex language, particularly in familiar situations. |
| Band 5 | Modest user | You have a partial command of the language, and cope with overall meaning in most situations, although you are likely to make many mistakes. You should be able to handle basic communication in your own field. |
| Band 4 | Limited user | Your basic competence is limited to familiar situations. You frequently show problems in understanding and expression. You are not able to use complex language. |
| Band 3 | Extremely limited user | You convey and understand only general meaning in very familiar situations. There are frequent breakdowns in communication. |
| Band 2 | Intermittent user | You have great difficulty understanding spoken and written English. |
| Band 1 | Non-user | You have no ability to use the language except for a few isolated words. |
| Band 0 | Did not attempt the test | You did not answer the questions. |

As writing is the main topic of this thesis, the focus of the discussion will be about writing, particularly the part of the measure that assesses coherence of written scripts.

4.3.2 Criteria for Analysis

The following section will discuss the required steps for conducting analysis through IELTS measure.

4.3.2.1 The format of IELTS written test

The writing test lasts for 60 minutes during which time a candidate is required to complete two tasks. The first task is allocated 20 minutes and the second, 40 minutes. However, the format differs between the Academic and General Module contexts in terms of the content of the tasks or assignments. In the first task of Academic test, students are given a flow chart, graph, table or diagram. They are required to write 150 words in 20 minutes to explain, organise, compare or contrast and summarise the information given in the flow chart, graph, table or diagram. This assignment is designed to assess their reading, writing and comprehension abilities in relation to the test. In the General Module, candidates are required to write 150 words on a given topic which is generally a letter and are assessed on their ability to provide factual information, engaging their potential audience as well as expressing personal opinions.

The second part is comparatively longer and has more weight at about 60% of the whole writing task. Although this is the same in both the Academic and General Module, in terms of task length and assessment, the writing task may differ in terms of the topic or the content of the prompt. In this task candidates are given a prompt or proposition which is related to daily life experiences. Candidates are required to determine their position either in favour or against the proposition, and then to present their ideas and also justify their stance logically in a persuasive manner. Candidates are

also assessed for the use of variety of vocabulary, grammar, task response and coherence and cohesion (Green, 2007)

4.3.2.2 Marking of IELTS written test

Candidates in the IELTS test are assessed on four criteria: ‘Task Achievement (in Task 1) and Task Response (in Task 2), Coherence and Cohesion, Lexical Resource, and Grammatical Range and Accuracy’ (Pearson, 2018). Marks are allocated on 9 point scale referred to above, with 1 as the lowest and 9 as the highest band. Each band of the scale has specific descriptors and an assessor allocates marks by observing the presence or absence of these descriptors in the candidates’ written script. Scripts are first assessed for each of the four criteria on the 1-9 bands separately, and subsequently marked using the 1-9 bands holistically for overall writing proficiency.

As focus of the study was on the coherence assessment of the written texts, the other three criteria were not employed. Accordingly, only descriptors that define coherence were used for the present analysis. The part of the measure that analyses coherence also includes cohesion, which has been considered as one of the constructs of coherence (Halliday & Hasan, 1976). Cohesion is used to connect surface level text, and help link different parts of the text together. These links are normally discerned as ‘cohesive ties’. However, some studies suggest that expert users employ less cohesive ties than less expert or novice writers, and evidence also supports the view that a text can be coherent with a few cohesive ties (Bae, 2001; Kuo, 1995).

The second most obvious construct in the IELTS measurement scale for coherence is ‘organisation’, which is also referred to as the ‘structure’ of a text. Organisation implies that a text should have a proper compositional structure including

a beginning (introduction), a body (exposition) and a concluding or end paragraph. This established organisational format of the text is deemed to be helpful for the reader (familiar with this traditional structure) and minimises the effort required of them to comprehend the text.

The third construct in the scale is the ‘progression or development of ideas’ through logical insertion of new information related to the main topic. The logical progression, by linking the main topic with sub-topics, is a way to assess a writer’s knowledge of the topic and their skill or ability to connect related ideas together. Previous studies on coherence support the idea that a coherent text includes a sequence of events or ideas which are developed logically (Bamberg, 1983; Van Dijk, 1977). Most often this is achieved by introducing a topic sentence in each paragraph which are subsequently corroborated or extended by supporting ideas (Barabas & Jumao-as, 2009; Lautamatti, 1978).

The IELTS descriptors do not, however, overtly express how to assess these constructs in the text, which may lead to confusion and subjectivity on the part of the raters. Nevertheless, proper training may bring the raters’ assessments into close rating alignment (Mayor et al., 2007).

Table 4.2: Descriptors of Coherence and Cohesion in IELTS written test and as used in the current study to score students' writings

| Band | Coherence and Cohesion |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9 | Uses cohesion in such a way that it attracts no attention Skilfully manages paragraphing |
| 8 | Sequences information and ideas logically Manages all aspects of cohesion well Uses paragraphing sufficiently and appropriately |
| 7 | Logically organises information and ideas; there is clear progression Throughout Uses a range of cohesive devices appropriately although there may Be some under-/over-use Presents a clear central topic within each paragraph |
| 6 | Arranges information and ideas coherently and there is a clear Overall progression Uses cohesive devices effectively, but cohesion within and/or Between sentences may be faulty or mechanical May not always use referencing clearly or appropriately Uses paragraphing, but not always logically |
| 5 | Presents information with some organisation but there may be a lack of overall progression Makes inadequate, inaccurate or over use of cohesive devices May be repetitive because of lack of referencing and substitution May not write in paragraphs, or paragraphing may be inadequate |
| 4 | Presents information and ideas but these are not arranged coherently And there is no clear progression in the response Uses some basic cohesive devices but these may be inaccurate or Repetitive May not write in paragraphs or their use may be confusing |
| 3 | Does not organise ideas logically May use a very limited range of cohesive devices, and those used May not indicate a logical relationship between ideas |
| 2 | Has very little control of organisational features |
| 1 | Fails to communicate any message |
| 0 | Does not attend Does not attempt the task in any way Writes a totally memorised response |

4.3.2.3 IELTS scale for coherence measure

Table 4.2 shows IELTS band descriptors for the coherence measure which shows different proficiency levels from ‘non-user’ (band 1), to ‘expert user’ (band 9), as indicated above.

4.3.3 Sample Analysis

The following is a sample analysis of an essay written for the present study to understand the analysis process of IELTS measure.

¹Some scientists research on wildlife.² They found it difficult life to the people and animals.³ Like people animals also feel everything.⁴ They live like a family as people live.⁵ Their mothers also love their children.⁶ Children live happy life with their parents in wildlife.⁷ Scientist research that elephant slept six hours each night.⁸ They sleep in groups to save one another.⁹ The weather was pleasant in wildlife.¹⁰ Always rains there in wildlife.¹¹ Scientists completed their work and came back.

Score: 5/9 (Five bands out of nine)

4.3.3.1 Explanation for scoring

The above sample essay was assessed for coherence using IELTS measure. The superscript values indicate the number of sentences the essay contained. Although the essay shows an organisational pattern as it describes the purpose of scientist visiting wildlife in the beginning sentence, and fulfilment of the purpose of scientists to study wildlife in the last sentence, it lacks overall organisation because the body structure is very weak. It does not show an overall progression of the topic and jumps from one topic to another. In terms of cohesive ties, the writer just focused on the use of

references through pronouns and did not utilise other cohesive devices such as substitution or ellipsis (for detail see chapter two). Moreover, some of the sentences are quite incoherent and used illogically. For example, the unexpected mention of the weather in sentence 9.

As can be seen in the descriptors, the essay does not sit above 6 band points because it lacks adequate organisation and skilful use of cohesive ties as well as a clear topic sentence indicating the writer's position. It does not, however, fall below band 4 because it has some progression and some logical relationships among the cohesive ties. As most of the features of this essay can be observed in band 5, the candidate was given 5 out of 9, which indicates that the writer is a modest user of the language.

4.3.4 Studies related to IELTS marking and assessment

Although there are studies investigating IELTS writing assessment criteria, to the best of the researcher's knowledge there is not a single study specifically focused solely on the coherence part of the written text analysis. In the following section, studies related to the validity of IELTS writing task and assessment will be discussed to explain the validity and reliability of the IELTS rubrics for writing assessment.

4.3.4.1 Construct validity of writing

Rater training is generally recognised as a very important source for maintaining the validity and reliability in the testing of second language performance (Alderson, 1991). Furneaux and Rignall (2007) conducted a study to investigate the effects of training on IELTS raters' marking consistency and the judgement about the writing scale. For this, 12 trainee examiners participated in the study. Each rater rated 8 scripts in addition to writing a brief retrospective report about the rating of four of the scripts.

Findings indicated that there was a modest gain in the standardisation of the raters over a period of time, but suggested that training was more useful for an individual's consistency and confidence in assessment, rather than their conformity with other raters. The findings also revealed that some of the criteria for assessment (such as coherence) were more difficult for the raters to apply than others. For example, some raters do not strictly follow all of the criteria leading to difference among the raters. These data suggest a need to revise some of the assessment criteria, such as coherence, and to encourage raters to follow the prescribed criteria in order to improve conformity in assessment.

The purpose of the Mayor et al. (2007) study was to compare the linguistic features in high and low-rated essays, with the aim of determining the linguistic features focussed on by raters when rating written text. Another feature of the study was to compare the high and low-rated scripts on the basis of linguistic features with the IELTS descriptors. Findings echoed the validity of the rubrics as there was a strong relationship between the high-rated scripts which had high word length, low grammar error rate and use of complex sentence structure, and the linguistic features that appear in high band IELTS descriptors.

The study of Kennedy and Thorp (2007) was similar to Mayor et al. (2007) and also considered the features of low and high IELTS-rated essays in order to examine the validity of the scale used for marking the test papers. The researchers used 130 scripts responding to the same task from IELTS Academic Writing Task 2. The analysis was carried out manually and also through the WordSmith Tools Concordance programme. Findings confirmed that all band 8 scripts included a variety of language features, longer essay lengths, more complex sentences, more coherent texts with rich

content knowledge, and less use of cohesive markers, less lexico-grammatical errors, better organisation and good interaction with readers than low-rated essays in the 4-6 bands.

4.3.4.2 Content and predictive validity

Morton (2007) conducted a study to assess the content validity of the IELTS academic written task 2. The purpose of the study was to examine the relationship between IELTS academic writing task and the required language use for university assignments. The data was collected through a survey of writing tasks and interviews with academic staff. It comprised a total of 155 university written assignments of undergraduate, and of postgraduate levels, and compared 20 IELTS written tasks. For interview, 12 university lecturers were recruited. Overall, academia were satisfied with the IELTS test; however, some of them identified an overwhelming focus in the IELTS upon opinion, whereas university assignments require careful use of source and language.

Recently, Müller and Daller (2019) conducted a study to assess the predictive validity of IELTS academic test with regard to university success. Undergraduate nurses (N= 49) were part of the study. Their CGPA in theoretical and practical courses was correlated with IELTS band score. A significant correlation ($r = 0.509$, $p < .001$) was found between participants' IELTS score and their academic achievements supporting the predictive validity of IELTS Academic test for their academic success in universities.

In another study, Schoepp (2018) examined the predictive validity of IELTS test in the context of United Arab Emirates. A large number of undergraduate students

(N=953) were selected for the study who appeared in IELTS test to get entry in university programme. Findings supported the IELTS test as a predictor of university success. Specifically, band 6 scores were highly correlated with the students' achievement in the university studies.

4.4 Holistic Coherence Scale

4.4.1 Introduction of the measure

National Assessment of Educational Progress (NAEP) in America claimed in 1970 that, by comparison with previous decades, students' writing quality had declined, particularly lacking in terms of coherence in written output. Although NAEP criticised students' essays, they did not indicate exactly what was lacking in coherence (Bamberg, 1984). Having studied the report and rubrics used for coherence analysis, Bamberg (1984) indicated that rubrics did not assess coherence. For instance, essays were assessed in two parts: first, for a holistic general impression score, and second, for a detailed description of specific features such as mechanics and grammar. Coherence was assessed in terms of mechanics and generally cohesive devices were the focus, which are now known as cohesion as termed by Halliday and Hasan (1976). In addition, essays were assessed for sentence level (local) coherence only, whereas discourse level (global) coherence was completely ignored. Text linguists such as Van Dijk (1985), Bamberg (1984), Kintsch and Van Dijk (1978) and others emphasised that a text is coherent if its local coherence is connected with global coherence.

Table 4.3: Bamberg (1984, p. 317-18) Holistic Coherence Scale as used in the current study

| Coherence level | Description |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 = fully coherent | <p>Writer clearly identifies the topic</p> <p>Writer does not shift topics or digress</p> <p>Writer orients the reader by creating a context or situation</p> <p>Writer organizes details according to a discernible plan that is sustained throughout the essay</p> <p>Writer skilfully uses cohesive ties such as lexical cohesion, conjunction, reference, etc. to link sentences and/or paragraphs together</p> <p>Writer often concludes with a statement that gives closure</p> <p>Discourse flows smoothly - few or no grammatical and/or mechanical errors interrupt the reading process</p> |
| 3= Partially coherent | <p>If writer does not explicitly identify the topic, s/he provides enough details so that readers can probably identify the specific subject</p> <p>Writer has one main topic but there may be minor digressions</p> <p>Writer provides some reader orientation, either by briefly suggesting the context or by directly announcing the topic</p> <p>Writer organizes details according to a plan, but may not sustain it throughout or may list details in parts of the essay</p> <p>Writer uses some cohesive ties such as lexical cohesion, conjunction, reference, etc., to link sentences and/or paragraphs together</p> <p>Writer does not usually conclude with a statement that creates a sense of closure</p> <p>Discourse generally flows smoothly although occasional grammatical and/or mechanical errors may interrupt the reading process</p> |
| 2=Incoherent | <p>Some of the following prevent the reader from integrating the text into a coherent whole: Writer does not identify the topic and the reader would be unlikely to infer or guess the topic from the details provided</p> <p>Writer shifts topics or digresses frequently from the topic</p> <p>Writer assumes the reader shares his/her context and provides little or no orientation</p> <p>Writer has no organizational plan in most of the text and frequently relies on listing</p> <p>Writer uses few cohesive ties such as lexical cohesion, conjunction, reference, etc. to link sentences and/or paragraphs together</p> <p>Writer creates no sense of closure</p> <p>Discourse flow is irregular or rough because mechanical and/or grammatical errors frequently interrupt the reading process (Table 4.3 Cont.)</p> |
| 1= incomprehensible | <p>Many of the following prevent the reader from making sense of the text: Topic cannot be identified</p> <p>Writer moves from topic to topic by association or digresses frequently</p> <p>Writer assumes the reader shares his/her context and provides no orientation</p> <p>Writer has no organizational plan and either lists or follows an associative order</p> <p>Writer uses very few cohesive ties such as lexical cohesion, conjunction, reference, etc. and sentences do not seem connected or linked together</p> <p>Discourse flow is very rough or irregular because writer omits structure words, inflectional endings and/or makes numerous grammatical and mechanical errors that continuously interrupt the reading process</p> |

In light of these deficiencies, Bamberg (1984) developed the Holistic Coherence Scale to assess coherence for a large number of essays. Methodologically, Bamberg (1984) first collected discourse features described by Van Dijk (1980) as local and global coherence, by Halliday and Hasan (1976) as theory of cohesion, and by Witte and Faigley (1981) as writer's purpose and audience knowledge and expectation (see detailed discussion in chapter two). Bamberg (1984) then developed a 4-point rubric scale based on these ideas, with 4 being the highest level of coherence, termed as 'fully coherent', while 1 was the lowest, termed as 'incomprehensible' (see figure 4.3 below for detail).

4.4.2 Criteria for Analysis

As a coherence measures, the Holistic Coherence Scale proved very useful as compared to other coherence measures. The Holistic Coherence Scale assesses coherence in terms of a list of constructs that make up coherence in a text, pointing out and identifying the presence or absence of these coherence constructs. Secondly, instead of assessing coherence on sentence level only, the Holistic Coherence Scale assesses text coherence on a sentence, as well as on a discourse, level. Finally, it rates essays on a 4-point ordinal scale which assesses coherence in terms of the degree to which an essay is coherent, rather than simply stating that the essay is coherent or incoherent.

Subsequently, Connor and Lauer (1985) argued that the descriptors of Holistic Coherence Scale focus on features that can be divided into six different sub-components of coherence. They modified the scale and divided it into six sub-components of coherence, namely: focus, context, organisation, cohesion, closure and grammar error. The information in figure 4.4, taken from Connor and Lauer (1985, p. 311), further

illustrates the division of Bamberg's (1984) Holistic Coherence Scale into six constructs of coherence.

Table 4.4: Connor and Lauer (1985, p. 311) Categories of Holistic Coherence Scale as used in the current study

| Bamberg's | Connor/Lauer labels |
|--------------------------------------------------------------------------------------------------------------------|----------------------------|
| Four Point Coherence Scale - for these categories the writer: | |
| Identifies the topic and does not shift or digress | Focus |
| Orients the reader by describing the context or situation | Context |
| Organizes details according to a discernible plan that is sustained throughout the essay | Organisation |
| Skilfully uses cohesive ties (lexical cohesion, conjunction, reference, etc.) To link sentences and/ or paragraphs | Cohesion |
| Often concludes with a statement that gives the reader a definite sense of closure | Closure |
| Makes few or no grammatical and/or mechanical errors that interrupt the discourse flow or reading process | Grammar |

One of the objectives of the present study is to explore the underlying components of each measure used and which of these component contributes more in the development of coherence in adult ESL learners' writing. Therefore, in addition to analysing coherence holistically according to the 4 point scale developed by Bamberg (1984), all the sub-components were also analysed individually according to the sub-categories set by Connor and Lauer (see table 4.4 for each sub-component part). These sub-component parts were also marked on 4 point scales with 4 being the highest score and 1 the lowest.

4.4.2.1 Definitions of the terms

The definitions of all six sub-components of Holistic Coherence Scale as per the categories of Connor and Lauer (1985) will be given in the following section in order to help clarify the analysis of these.

4.4.2.1.1 Focus

One main topic only is to be discussed in order to avoid any digression from the topic.

4.4.2.1.2 Context

A setting or situation in which the author carries out the communication. It is physical as well as social. A physical setting refers to a time and/or a place, eg. a hotel, a zoo, a beach or village. A social setting refers to the speakers who take part in a communication as interlocutor whether the communication is with a boss, a supervisor, a friend or with a member of the general public.

4.4.2.1.3 Organisation

Organisation refers to the plan or structure of a text through which an author arranges the parts of the whole text. It is a step by step description of the event so that it should easily be comprehensible to the reader.

4.4.2.1.4 Cohesion

Surface level quality of a text in which an author uses lexical ties such as reference, substitution, ellipsis, conjunction, collocation and lexical reiteration to connect text together as a cohesive unit.

4.4.2.1.5 Closure

A statement in which the topic is restated or summarised. Usually, it is the final statement by the author and comes at the end of the text.

4.4.2.1.6 Grammar

Includes traditional aspects of grammar including subject-verb agreement and punctuation, tenses (McKenna, 1988, pp. 8-9).

4.4.3 Sample Analysis:

Following is the sample analysis of an essay taken from the collected data for the present study. The purpose of this sample analysis is to present a practical analysis for the better understanding with the analysis process of Holistic Coherence Scale.

The analysis was conducted in two steps. In the first, the essay was marked for each individual underlying construct of the measure on the scale of 1-4 (with 4 being the highest and 1 being the lowest). After that, the essay was marked for coherence on the 1-4 scale outlined above. The purpose of this bi-analysis was to explore which underlying constructs contributed more in the overall construction of coherence in adult ESL learners' writing. Although the marks for coherence were given holistically, marking of each construct was also considered.

¹Some scientists research on wildlife. ² They found it difficult life to the people and animals. ³ Like people animals also feel everything. ⁴ They live like a family as people live. ⁵ Their mothers also love their children. ⁶ Children live happy life with their parents in wildlife. ⁷ Scientist research that elephant slept six hours each night. ⁸ They sleep in groups to save one another. ⁹ The weather was pleasant in wildlife. ¹⁰ Always rains there in wildlife. ¹¹ Scientists completed their work and came back.

Table 4.5: Marking Scale for Holistic Coherence Scale

| Skills | 1 | 2 | 3 | 4 |
|---------------|----------|----------|----------|----------|
| Focus | | √ | | |
| Context | | | √ | |
| Organisation | | √ | | |
| Closure | | √ | | |
| Cohesion | | | √ | |
| Grammar error | | | √ | |
| Coherence | | √ | | |

4.4.3.1 Explanation for scoring

Focus in this context means there should be no irrelevant topic in the text. As can be seen, the essay is about wildlife and each sentence talks about wildlife in one way or another. These sentences, however, are not developed logically or sequentially, one after the other and an abrupt change of topic occurs in sentence number 9. While it can be said that the text has unity of topic, in itself the text is under-developed. Accordingly, focus was rated at 2 marks out of 4.

Context refers to a social, physical or psychological setting. The writer of the essay introduced the word ‘wildlife’ in the opening sentence and repeated it several times in subsequent sentences. That said, there is a lack of typical wildlife description or scenario, such as portrayal of wild forest, or how wildlife may be more difficult than social life, or the basic purpose of scientists doing research in wildlife. That is why the context was rated 3 marks out of 4.

As far as organisation of the text is concerned, the writer has tried to organise an overall plan starting with the purpose of scientists in wildlife as a clear purpose. The writer then moves towards a clear end, discussing family relations in wildlife, and touching on part of elephant life, and then the weather. Thus, readers feel that only one topic, wildlife, is being discussed. However, the text lacks in sentence level organisation insofar as there are no logical connections between sentences so that readers experience a sudden jump from one topic to another without adequate explanation of each idea. Therefore, the text has been given 2 marks out of 4.

Closure typically involves a reiteration of the writer’s purpose in writing the text. The writer normally concludes his/her argument which has been developed

throughout the body of the text. Although the writer of the essay has attempted to conclude the text in the closing statement (which gives some sense of closure), it does not state the complete purpose of the text and, as a consequence, the ending statement appears abrupt, rather than offering a conclusion. Therefore, it was given 2 marks out of 4.

Cohesion is used to connect the text grammatically on surface level, whereas coherence refers to the semantic links. The writer has used lexical cohesion through the repetition of the same words such as: scientists, wildlife and animal, and through the pronouns 'they' and 'it'. The writer has utilised limited features of cohesion and does not use cohesive markers such as 'first', 'second', and/or 'later on'. These markers would help the reader comprehend the text step by step. On the whole, however, the writer has attempted to connect the text together and so this text was given 3 marks out of 4.

In case of grammar, the writer has few mistakes of tenses and punctuation. Some sentence structures are weak, such as sentence number 7 and 10. Sentence number 7 does not show tense (i.e., whether scientist 'researched' or 'researches') and sentence number 10 should have the subject pronoun 'it' at the beginning. Therefore, the text was given 3 marks out of 4.

Having analysed the constituent parts of the HCS, the text was analysed for overall coherence. Although the text would be re-read as part of the marking of coherence specifically, the analysis of the constituent parts also supported decisions about overall coherence. On the whole, the text stands between 2 to 3 marks for coherence. In spite of having 3 marks in context, cohesion and grammar, the text lacks in focus, organisation and closure, which are more related to meaning. Therefore, the

text should be rated at 2 marks out of 4. This was also consistent with an overall interpretation of coherence based on the descriptors in figure 5.3.

4.4.4 Studies Related to Holistic Coherence Scale

Connor and Lauer (1985) conducted a study to explore the validity and reliability of the holistic measure. Bamberg's (1978) Holistic Coherence Scale for coherence analysis and Halliday and Hasan's (1976) scale for cohesion were used. Bamberg's scale was further divided into the 6 sub-components discussed above in order to find out the contribution of each in coherence. Fifty compositions from the University of Illinois, Urbana, fifty from the UK and fifty from New Zealand were collected for the analysis. Three experienced raters rated the essays for holistic marking through their general impression marking. Findings showed coherence as a predictor of writing quality, whereas cohesion played a minor role in writing. All sub-component parts had high correlation with Bamberg's coherence scale, with particularly focus, context and organisation being highly correlated with coherence.

In line with Connor and Lauer (1985), McKenna (1988) conducted another study to validate Bamberg's Holistic Coherence Scale. The researcher was also interested to know whether cohesion and coherence are different but correlate with each other. The researcher was also keen to explore which sub-component from Bamberg's scale contributes more to coherence development. For this purpose, 30 papers were randomly selected from over 200 papers written by incoming freshmen college students. These papers were assessed by 21 experienced raters who had 5 to 20 years' experience of teaching and assessment. Context was found to be more related to coherence than cohesion. Findings revealed that focus, organisation, context and intent (purpose) of the writer showed high levels of correlation with coherence. However,

grammar did not correlate with coherence. Instead, grammar had strong correlation with cohesion.

4.5 Topical Structure Analysis

4.5.1 Introduction of the measure

Lautamatti (1978) proposed Topical Structure Analysis (TSA) to analyse coherence at sentence, paragraph and discourse level. The analysis examines how topics repeat, shift, and return to earlier topics in discourse. The measure is mainly based on topical development proposed by the Prague School of Linguists. The main linguists of the school were Mathesius (1975), Firbas (1964) and Daneš (1974). For topical analysis, Prague linguists divided sentence into two main parts, ‘theme’ and ‘rheme’. Theme is defined as ‘what is the sentence about’ and rheme as ‘what is about theme’. Mathesius (1975) maintained that in the ‘theme’ part of a sentence information already known to the reader or listener is mentioned, while in the ‘rheme’ part, new information is added to the discourse. This juxtaposition of old/new or known/unknown information develops the discourse topic.

The topical development of text can be analysed either by bottom-up or top-down approaches. In the bottom-up approach, the topic of each sentence is assessed for its link to other topics in consecutive sentences and hence for an overall topic of a paragraph. Similarly, the topic of each paragraph is assessed for its link to overall topic of the written discourse. In this way, the topic of each sentence and paragraph is connected to the overall topic of the text. In contrast, in top-down approach, topical analysis is conducted downward from discourse topic to paragraph topic, and then topic of each sentence. In either approach, to produce a coherent text, each topic should be connected to another semantically. This topic should be recognised from sentence to

paragraph, and paragraph to discourse, ultimately leading to a single unit of meaning. Any disconnected topic is considered as a coherence break or deviation from the main topic which may disturb the meaning of the discourse.

According to Connor and Farmer (1990, p. 127), “TSA considers both global and local coherence of the text” which are the properties of a well-connected coherent text (Van Dijk, 1977). Local coherence is the sentence level, whereas global coherence is at the discourse level. Local coherence is traced out by linking each sentence topic with preceding and succeeding sentence topics, while global coherence is assessed by analysing each paragraph topic to overall discourse topic. Topical Structure Analysis identifies local coherence by marking key words in a sentence as well as identifying their position in a sentence and, finally, by accumulating key words on a chart to analyse global coherence.

Topical Structure Analysis has been supported by several researchers and professional raters (Connor & Farmer, 1990; Phuwichit, 2004; Witte, 1983; Wu, 1997). Knoch (2007) reported positive opinion of the experienced professional raters about Topical Structure Analysis. In different studies conducted by Chiu (2004), Fan and Hsu (2008), Liangprayoon et al. (2013), and Connor and Farmer (1990), students reported that they had a clearer idea of coherence since they were taught Topical Structure Analysis; and the same result has been found for raters after being taught Topical Structure Analysis.

Since Lautamatti (1978) developed Topical Structure Analysis for measuring the coherence of a written text, it has been used and found effective by many researchers in both L1 and L2 contexts (Almaden, 2006; Attelisi, 2012; Connor & Farmer, 1990; Liangprayoon et al., 2013; Schneider & Connor, 1990; Witte, 1983; Wu, 1997).

Liangprayoon et al. (2013) found it an effective tool to teach coherence to Thai ESL learners. Simpson (2000) found it useful in the internal coherent structure analysis of the written texts in the academic writing of the professional writers for academic research journals. Similarly, several researchers found it an effective tool to teach revision strategies to adult learners of English to improve coherence in their writings (Attelisi, 2012; Chiu, 2004; Connor & Farmer, 1990; Fan & Hsu, 2008).

4.5.2 Criteria for Analysis

The following section discusses the terms and procedures that are part of Topical Structure Analysis and which were used in the current study.

4.5.2.1 Types of Progression

The word ‘progression’ is applied in the sense of ‘development’ of text. Lautamatti (1978) introduced three kinds of topical progressions (see below). Subsequently, another kind of progression ‘Unrelated progression’ was added by Connor and Farmer (1990). Accordingly, there are four kinds of progressions in the measure:

1. Parallel progression (PP): the topics in successive sentences are either the same, or synonyms and/or pronouns are used.
2. Sequential progression (SP): semantically related different topics are used in successive sentences. Usually, any element from the ‘rheme’ part of preceding sentence becomes the topic or theme of the succeeding sentence.
3. Extended parallel progression (EPP): two semantically identical topics are interrupted by at least one occurrence of sequential progression.
4. Unrelated Progression: the topic of a sentence is neither related to the theme or rheme part of the preceding nor successive sentences.

All these progressions have different functions in the thematic development of the text. Parallel progression is used to give depth to the topic. By repeating the same topic in consecutive sentences, the writer provides detailed information about the topic under discussion. Sequential progression is a way to extend the text by introducing new topics that are semantically related to one another. Extended parallel progression is used to remind the reader about the main topic by repeating the previously used topic after at least one occurrence of a sequential progression. It is also used to write a closing statement at the end of the paragraph. Thus, these three progressions work to give depth, width and to close the text.

4.5.2.2 Criteria for t-unit

The measurement unit in the present study was ‘minimal terminable unit’ also known as the ‘t-unit’. It is defined as an independent clause with all of its dependent clauses (Hewings & North, 2006). It was selected as a measurement unit because it gives flexibility to recognise more than one topic in compound sentences. In addition, t-unit has been used by many researchers to analyse learner’s writing quality: see Knoch (2007), and Witte and Faigley (1981).

4.5.2.3 Criteria for identifying Sentence topic

In Topical Structure Analysis (TSA), coherence is taken as the semantic property of the written text, as defined by Van Dijk (1977, p. 93). This implies that the topic in Topical Structure Analysis is a semantic topic of each sentence not its grammatical subject. The grammatical subject is the syntactic property whereas topic is the semantic property of the text. The grammatical subject always occupies the initial

position in a sentence, whereas topic may appear in any part of the sentence. The following examples will help to clarify the difference between the two:

1. The earth revolves around the sun.
2. Linguists agree that language is a species-specific property.

In example 1, 'the earth' is the topic of the sentence because the rest of the sentence is about the earth and at the same time it is the grammatical subject because it occupies the initial position of the sentence. In example 2, though 'Linguists' is the grammatical subject of the sentence (since it occupies initial position) the topic of the sentence is 'language' because the whole sentence is about language being a species-specific property. Therefore, the semantic topic will be used for analysis in the study as defined above.

4.5.2.4 Steps for analysis:

Certain steps are followed for the coherence analysis of a text with Topical Structure analysis. These are:

1. The first step is to divide the whole text into t-units. This division makes it easy for the assessor to identify the topic of each t-unit. A slash (/) is used to separate one t-unit from another.
2. The second step is to identify topics within each t-unit. Pronouns may be replaced by their respective referent nouns for ease. This identification of topics helps in tracing out the local coherence of the text. Normally, topics are written in *Italics* in the text for analysis.
3. The third step is to construct a diagram of each progression. This step clarifies all kinds of progressions used in the text with their percentage. Also it

highlights coherence breaks, if there are any. Importantly, the diagram clarifies the connection between local and global coherence.

4.5.2.5 Scale for Marking

Although Lautamatti (1978) developed Topical Structure Analysis to trace out textual coherence through topical development, she did not develop a marking scale. However, Knoch (2007) developed a five-mark scale to measure Topical Structure Analysis that has been assessed for its face validity by professional raters. The scale has been used for different ethnic groups as well as first and second language learners of English (Knoch, 2007). This five-mark scale was selected to mark the written essays for the present study because it was specifically developed for marking Topical Structure Analysis and has been verified for its validity and reliability (Knoch, 2007). Moreover, it has been used for textual analysis of ESL learners.

Table 4.6: TSA-based rating scale for coherence used in this study taken from Knoch (2007, p. 117)

| Level | Coherence |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Frequent: unrelated progression, Infrequent: sequential progression |
| 5 | As level 4, but coherence might be achieved in stretches of discourse by overusing parallel progression. Only a few unrelated progressions |
| 6 | Mixture of most categories |
| 7 | Frequent: sequential progression Infrequent: parallel progression, Extended Parallel Progression Possibly no unrelated progression Superstructure occurring more frequently |
| 8 | Frequent: sequential progression Infrequent: parallel progression No unrelated progression Few extended parallel progressions |

4.5.3 Sample Analysis:

¹Some *scientists* research on wildlife / ²*They (scientists)* found it (wildlife) difficult life to the people and animals / ³Like people *animals* also feel everything / ⁴*They (animals)* live like a family as people live/ ⁵*Their (animal) mothers* also love their (animal) children / ⁶*Children* live happy life with their parents in wildlife/ ⁷Scientist research that *elephant* slept six hours each night/ ⁸*They (elephant)* sleep in groups to save one another / ⁹*The weather* was pleasant in wildlife / ¹⁰Always rains there in *wildlife*/ ¹¹*Scientists* completed their work and came back.

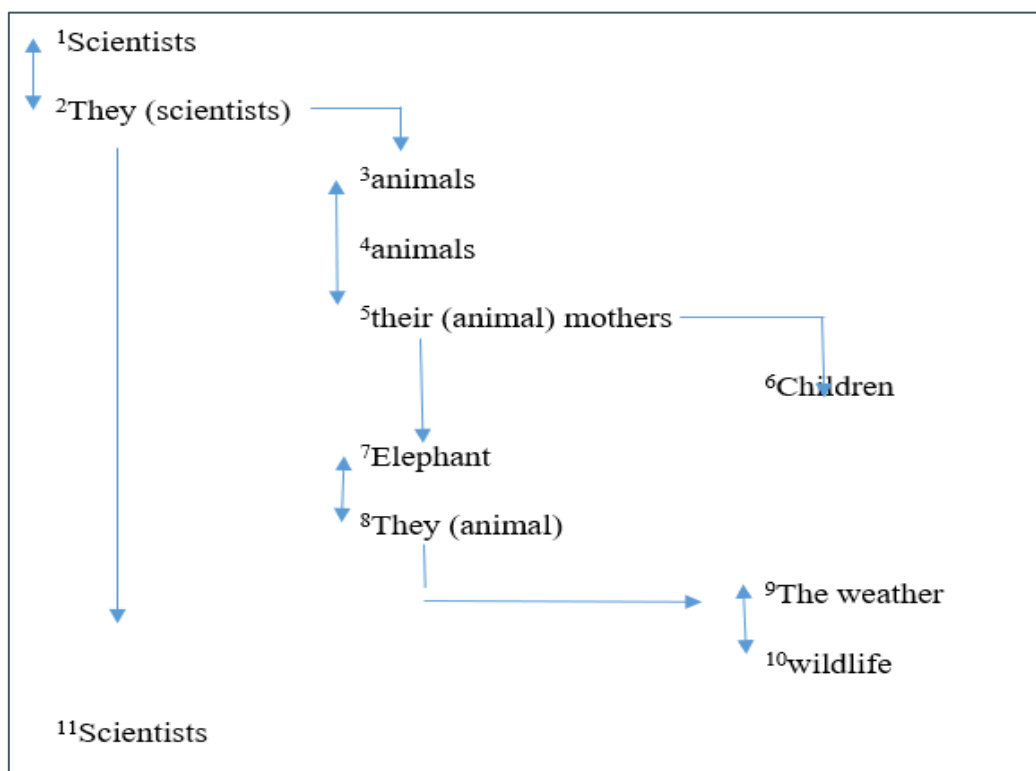
4.5.3.1 Explanation for scoring

All three steps were taken for the analysis. First, text was divided into t-units keeping independent clause with all its dependent clause. Referents were found for pronoun used in the text to make the analysis easier. Topic for each t-unit was marked and finally a progression chart was developed to show the types of progression used in the text. The chart can be seen in figure 4.1 below.

In this paragraph the first two topics are an example of parallel progression because both t-units share the same topic across consecutive sentences. The third topic is an example of sequential progression because the topic *animal* was taken from the rheme part of the previous t-unit. Topic of t-unit 4 and 5 are again example of parallel progression. T-unit 6 has sequential progression whereas 8 comprises a parallel progression. T-unit 9 is an example of unrelated progression because the topic does not have any link with the previous and the following sentence. Topic 7 and 11 are example

of extended parallel progression because topics were repeated after at least one occurrence of a sequential progression.

Figure 4.1 Chart showing types of progressions used in sample text



In parallel progression, topics are put below each other with a closed arrow connecting them. In sequential progression, each topic is placed with an indent to the right side and an arrow is used to show where it is derived from. In extended parallel progression, repeated topics are put directly below the already used topics and are aligned with a one-sided arrow. Unrelated progression is shown in the chart with an indent to the right side and, unlike sequential progression, an arrow is placed to the right but from the bottom side of the topic, such as from topic 8 –to- 9 in the example above. The essay does not fall into level 4 category although it has infrequent sequential progression but only one unrelated progression. Similarly though the text has almost all categories, they are not balanced in use. It is best suited to category 5 as the text contains

more use of parallel progression and less use of sequential and extended parallel progression, and just one use of unrelated progression. Therefore, text falls into the category 5 of the marking scheme outlined above.

4.5.4 Studies related to Topical Structure Analysis

4.5.4.1 Progression types and essay rating

Witte (1983) conducted a study to explore the features that a good and well written text should possess so that these features may be focused during teaching of writing to students. For the study, Witte (1983) selected essays assessed by two experienced raters on a scale of 1-4, with 1 being the lowest and 4 the highest. The essays were written for a Freshman Writing Programme at the University of Texas. A total of 48 argumentative essays were part of the study, 24 from high and 24 from low quality essays. Topical Structure Analysis was used to analyse the thematic development, particularly the ratio of each type of progression in the well-written versus the poorly-written essays. Findings showed that high quality essays used more parallel and extended parallel progressions than the low quality essays which contained more sequential progression. In addition, high quality essays comprised longer texts than the low quality ones.

After Witte's (1983) thematic analysis of essays written by native speakers of English, Schneider and Connor (1990) conducted a study to find out the pattern of thematic development by ESL learners. They randomly selected 15 essays from thousands of essays written for the Test of Written English (TWE) in 1987 which were assessed by TWE raters on a scale from 3-6, with 3 being the lowest and 6 the highest mark. Unlike Witte (1983), who used argumentative essays, Schneider and Connor (1990) used 'compare and contrast' essays in which two subjects are compared and

contrasted with each other. Differences were found in the proportional use of progressions in native and ESL learners' writings. In this study, high-rated essays written by ESL learners employed more use of sequential progression than the low-rated essays which used more parallel and extended parallel progression. Similar to Witte (1983) high-rated essays produced lengthier texts than low-rated essays. The differences may be attributed to the variance of genre used for analysis since genre affects topic progression (Ghazanfari et al., 2011). Different writing techniques are used for different genres. Narrative pattern, for example, is different from description. The former requires more verbs to narrate an event while the latter employs more nouns and adjectives to describe an element of interest.

Similarly, Barabas and Jumao-as (2009) and Kılıç et al. (2016) investigated the proportional use of progressions in ESL learners' writing. Barabas and Jumao-as (2009) selected 20 Cubano adult learners of English who were asked to write an essay on a given topic. Findings revealed that writers used about 45% sequential progression followed by 35% of parallel progression and 20% extended parallel progression. Kilic's (2016) study comprised 81 Turkish adult university students. They were asked to write an argumentative essay and the results showed that high quality essays used 57% sequential progression, 32% parallel progression and 11% extended parallel progression.

Ghazanfari et al. (2011) conducted a study in Iran to find out the answer to two main questions. First, is there any difference in the use of progression type in different kinds of paragraphs such as argumentative, narrative and compare and contrast? Second, which types of progressions are used by Irani ESL learners? The 40 undergraduate students in the study were selected from those with English as a major

subject in their course. Each participant was asked to write three paragraphs on cause-effect, comparison-contrast and chronological. All paragraphs were analysed using Topical Structure Analysis and the findings suggested that sequential progression was the most frequently used type of progression across the three different kinds of paragraph. Parallel progression was the second most used while extended parallel progression the least.

All the above mentioned studies had adult ESL/EFL learners except Witte (1983) who worked with native adult learners and this may be the reason for the different findings. The findings of all other studies with adult ESL learners, including the earlier mentioned study of Knoch (2007), found more use of sequential progression than parallel progression, and infrequent use of unrelated progression in high-rated essays. These findings validate the marking scale developed by Knoch (2007) and used for marking coherence analysis in the present study. As the scale was developed and tested for adult ESL learners, this is also the reason to select the scale for marking coherence of adult ESL learners' essays in the present study.

4.5.4.2 Progression types and cultural differences

Simpson (2000) investigated cultural differences in writing by 20 Spanish and 20 English professional writers, analysing 40 paragraphs (20 from each language) written for different well-renowned journals in Humanities. Physical structure and thematic development were assessed. The former was analysed for word-quantity, the use of noun or pronoun as the subject, while the latter was assessed in terms of theme-rheme connections using Topical Structure Analysis. The findings argued that English writings used more elaborative language than Spanish, but writers used almost equal percentages of parallel and sequential progression in their texts.

In the same vein, Dumanig et al. (2009) compared Philippine and American editorials of *The Philippine Daily* and *The New York Times*. Dumanig et al. (2009) collected 28 editorials written in English, 14 from each of the two papers written in the year 2002. The basic idea was to identify differences in the use of different types of progressions as defined by Lautamatti (1978). Data revealed that American editorials utilised more parallel progression than sequential progression, whereas Filipino editorials employed parallel and sequential progression equally. The findings showed that Filipino editorials are more elaborative, whereas American comparisons are more focused. Findings were attributed to cultural differences.

Adding to the previous argument in the last section, which stated the difference between the findings of Witte (1983) and other due to having native and ESL learners, the cultural differences studied in the Simpson (2000) study also witnessed the difference between native and non-native professional writers of English and other languages (Spanish in this case). In Simpson (2000) study writers of both languages used the same percentage of parallel and sequential progression. In second study, American professionals used more parallel progression than sequential progression and these findings are similar to Witte (1983) who also found more use of parallel progression by native speakers. However, non-native professional writers of English (Filipino in this study) used both progressions equally.

These studies support the view discussed in chapter two related to the effect of cultural differences on writing. The findings further support the view that even native and non-native professional writers of English and other languages, such as Spanish, differ in their writing styles. Moreover, in Dumanig et al. (2009) study, non-native professional writers used less parallel and sequential progression than native speakers.

Therefore, cultural differences might be expected to have effects in the present study as the participants are adult ESL learners of English.

4.5.4.3 Teaching and Revision

Attelisi (2012) conducted a study in Libya to investigate the impact of teaching Topical Structure Analysis to university students and thereby improve coherence construction in their writing. For this purpose, 63 third-year-students were selected. They were divided into treatment and controlled groups. The treatment group was taught coherence through Topical Structure Analysis while the other group was taught via a general syllabus without any explicit teaching of coherence. Pre- and post-tests were administered to observe the difference in the students' writing. Besides essay writing, semi-structured interviews and observation were also conducted. The essays were analysed by three female English native speakers who were experts in marking coherence. Three raters used three different criteria for coherence analysis which included analytic, holistic and trait-based measures. The findings revealed a significant improvement in the writings of treatment group. The group used all progressions in a balanced way. However, the treatment group, who were marked higher in their essays, used more sequential progression than parallel progression. In addition, the treatment group also had a better idea of coherence in writing as well as its impact on planning and revising stages. Ultimately, the Attelisi (2012) study supported the idea that Topical Structure Analysis is a useful tool for the teaching of coherent writing in adult EFL classrooms.

In order to find the implication of Topical Structure Analysis as a revision strategy for the improvement of coherence construction in a text, Fan and Hsu (2008) conducted a study in Chinese with a group of 40 adult participants, divided into two

groups. The first experimental group contained 25 learners, and the second was a controlled group with 15 students. Both of the groups were taught by the same teacher for fifteen weeks. The experimental group was taught to use Topical Structure Analysis to revise their written texts by detecting errors that might hinder coherence. Findings revealed that the experimental group improved significantly in terms of producing more coherent texts. Sequential progression was most utilised by the learners taught to use Topical Structure Analysis, followed by parallel and extended parallel progression.

Similarly, Liangprayoon et al. (2013) investigated the effectiveness of Topical Structure Analysis as a revision strategy and determined which type of progression is most frequently used by Thai learners. Participants were divided into an experimental and a controlled group. Each group consisted of 20 university students majoring in English. All participants were asked to write pre- and post-test essays of approximately 250 words. It was found that sequential progression was most frequently utilised by learners, followed by parallel, and extended parallel progression. However, instruction through Topical Structure Analysis proved more beneficial for low proficiency learners than high proficiency students. Overall learners reported a satisfactory response to Topical Structure Analysis training and indicated experiences of improved writing.

Liu (2009) investigated the impact of Topical Structure Analysis as a revision strategy and also included the teaching of cohesive devices for the better understanding of coherence. The participants were 30 high school students studying English as a major. They were divided into experimental and controlled groups, 15 in each. Findings supported the previous studies that the experimental group performed better than the controlled group in terms of writing performance. In their writing outputs, the experimental group used more sequential progression than other types of progressions.

The study also included expressions of satisfaction about Topical Structure Analysis learning by the participants.

4.6 Topic Based Analysis

Topic Based Analysis is the fourth measure that was used for coherence analysis of the written essays for the study. The measure was chosen due to its theoretical bases in the works of Halliday and Hasan (1976) and Hoey (1991). Topic Based Analysis is relatively new in comparison to other measures of coherence used in this study. It was chosen due to its emphasis on a more objective way of coherence analysis as compared to other, more established measures of coherence. The following section will deal with its introduction, process of analysis, a sample analysis of an essay and previous studies related to the measure.

4.6.1 Introduction of the measure

Topic Based Analysis is a measurement tool for coherence analysis developed by Watson Todd (2004, 2007, 2016). It analyses coherence by dividing the text into t-units, tracing out references, identifying key concepts and linking these concepts through moves in the text.

There are three ways to measure coherence through Topic Based Analysis:

1. Average distance of moves in a text.

A lower average distance would suggest a more coherent text.

2. Percentage of coherence breaks.

The greater the proportion of coherence breaks in a text, the less coherent the text. Breaks are measured by examining the percentage of moves.

3. Number of moves per t-unit.

A text with fewer moves between key concepts within a certain length may be easier for a reader to follow and therefore, exhibit a greater level of coherence (Watson Todd, 2004, p. 93).

Interestingly, Watson Todd (2004) results showed high correlation between experienced teachers' marks for coherence and the number of moves/t-units assessed through Topic Based Analysis. In contrast, the average distance of moves and percentage of coherence breaks did not have high correlations with teachers' assessment. Moreover, complete analysis is very complex and laborious (Watson Todd, 2004). Therefore, on the basis of high correlation between teachers' marks and number of moves/t-units, coherence analysis will be conducted only through number of moves per t-unit in the present study.

4.6.2 Definition of the terms

4.6.2.1 Concept

A concept is taken as a psychological construct which represents some entity in the world. It is either noun or pronoun such as tree, table, dream etc.

4.6.2.2 Move

Move is defined as the change between two concepts. For example, in the following sentence, the move is from scientist to wildlife because concepts are changed.

‘Some *scientists* research on *wildlife*’.



4.6.2.3 T-unit

An independent clause with all of its dependent clauses.

4.6.3 Criteria for Analysis

For a complete analysis through Topic Based Analysis, Watson Todd (2016) has explained six stages to be performed. However, data will be analysed only by analysing moves per t-unit in the present study; therefore, all these six stages will not be discussed and only the processes included in the current study will be explained in the following section.

4.6.3.1 Preparing the text for analysis

There are three ways in which a text needs to be prepared before analysing text through Topic Based Analysis. First, the text needs to be broken down into units. Since in this study we are investigating the writing of English learners whose use of sentence structure and punctuation may be inappropriate, the unit chosen is the t-unit. A t-unit is an independent clause together with all related dependent clauses (Fries, 1994). It is relatively straightforward to identify independent clauses and to assign dependent clauses to independent clauses in students' writing.

Second, ellipted material is identified to complete the sentence and refer to its referents. In this study, ellipted material is taken as the material which is readily available to readers but not explicitly stated in the t-unit under consideration. Generally, material is taken as being ellipted where t-units are syntactically incomplete, and parallel structure is the prime basis for identifying what material has been ellipted. For example, 'I went to market on Sunday and she on Monday'. The same sentence without elliptical use would be, 'I went to market on Sunday and she went to market on Monday'.

Third, the referents of any referring expressions are identified. In most of the cases, referents are identified for pronoun. Doing this, preference is given to a referent which matches to the same syntactically and semantically relevant position in another nearby t-unit (Sotillo & Starace-Nastasi, 1999). For example, ‘Shakespeare is a great playwright. His plays stands on top in English literature’. The first sentence contains ‘Shakespeare’ as a subject whereas second sentence contains ‘his’. To find out the referent for the expression ‘his’ in the second sentence, we need to go back to sentence 1 where ‘Shakespeare’ is the referent for it.

4.6.3.2 Identifying key concepts

Having prepared the texts, the next stage is to identify key concepts in each text. A concept is taken as a psychological construct which represents some entity in the world and which is represented in discourse through words such as tree, animal, table, etc. Thus, although it is tempting to associate concepts with words, it should be remembered that a concept is a psychological construct whereas a word is a linguistic phenomenon. Because of this difference, both nouns and noun phrases will be considered as potential concepts.

After identifying those nouns and noun phrases representing concepts in a text, these are then grouped into the concepts they represent by looking for repetition and paraphrase. From the list of all possible concepts in a text, the key concepts are identified based on two principles. First, key concepts are frequent (Scott, 2000). In this study, a minimum threshold of two occurrences was set for a concept to be considered as a key concept. Secondly, key concepts are salient (Scott, 2000), and thus concepts in titles, headings and underlining are considered as key concepts.

4.6.3.3 Measuring coherence

Concepts in a text are identified on the bases of frequency of occurrence. The frequency of occurrence shows density of the concept. The density of concepts according to De Beaugrande (1981) is the indicative of concept of discourse which means frequent occurrence of a concept in a text shows its relation and importance in the text. Secondly, the measurement of coherence is calculated by dividing total number of moves by total number of t-units.

4.6.4 Sample Analysis

Some *scientists* research on *wildlife* / *They (scientists)* found it (*wildlife*) difficult life to the *people and animals* / Like *people animals* also feel everything / *They (animals)* live like a family as *people* live/ *Their (animal) mothers* also love their (*animal*) children / *Children* live happy life with their parents in *wildlife*/ *Scientist* research that *elephant* slept six hours each night/ *They (elephants)* sleep in groups to save one another / *The weather* was pleasant in *wildlife* / Always rains there in *wildlife*/ *Scientists* completed their work and came back/.

Total T-Units: 11

Total moves: 20

Moves/T-Unit: 1.82

4.6.4.1 Explanation for scoring

At first, the text was divided into t-units. A t-unit consists of one main clause and one or more dependent clauses. Secondly, elliptical materials were identified, and then related referents were used to make the noun or noun phrase explicit, rather than

elliptic. After that, concepts in each t-unit were identified. Moves were drawn from one concept to another through an arrow which shows the change of concept from old to new. Frequency of concepts was counted in order to estimate which concepts were more frequently used than others because the high frequency concepts are considered as the topics of the text (De Beaugrande, 1981). Finally, the total number of moves were divided by total number of t-units. In this text, total t-units are 11 and moves 20 and the outcome of division is 1.82 moves per t-unit. This indicates a moderate writer since less moves per t-unit suggests a well-coherent text. More moves per t-unit may confuse the reader.

4.6.5 Studies Related to Topic Based Analysis

The following section deals with the studies that used Topic Based Analysis for measuring coherence. It will help to explore previous findings as well as validity and reliability of the measure.

4.6.5.1 Criterion Validity of Measure:

Topic Based Analysis measure was chosen as developed by Watson Todd who finds its theoretical bases in the cohesion work of Halliday and Hassan (1976) and Hoey (1991), particularly lexical cohesion. Both text linguists grounded their work to find out the connectivity in the text by tracing out links through the repetition of key words and phrases as the repetition of key words and phrases is considered to be a usage for reinforcing the message (De Beaugrande, 1981).

Hoey's (1991) Lexical Cohesion Analysis is based on two assumptions. First, the frequency of occurrence of a content word indicates its importance in a text being the topic of the discourse. Second, the greater number of sharing between and among

the sentences, make them more connected and cohesive. Based on these two assumptions of (Hoey, 1991) and Watson Todd (2016), potentially assess coherence through ‘connectedness’ and ‘relevance’. Watson Todd (2016) used connectedness for cohesion and relevance for coherence which shows explicit (cohesion) and implicit (coherence) links in the text respectively. Connectedness (cohesion) shows that whether the text has surface level connections with one another, whereas relevance (coherence) examines the semantic relationship of a concepts with one another.

In order to assess the criterion validity of the measure, Watson Todd (2016) conducted a triangulation of the measure with other three measures of coherence analysis. Triangulation “involves measuring or investigating a phenomenon from different perspectives” (Watson Todd, 2016, p. 53) which can enhance internal validity (Brown & Rodgers, 2002), and reliability (Seliger & Shohamy, 2000).

The three measures which Watson Todd (2016) used to correlate with Topic Based Analysis for triangulation were; Topical Structure Analysis (TSA), Given-new Progression Analysis (GNP), and Lexical Cohesion Analysis (LCA). The findings of correlation analysis showed a small agreement among the measures to identify key words. Only two measures showed a reasonable agreement on finding key words, i.e. Given-new and Topic Based Analysis. All measures, however, showed high levels of agreement to identify topic boundaries, particularly Topical Structure Analysis has been useful to locate topic boundaries. (Topic boundary refers to the extent where a topic ends and new topic starts). The difference among these four measures in analysing discourse topics can be attributed to the subjective nature of topics. However, similarity shows that the measures somehow analyse some similar constructs (Watson Todd,

2016) and the difference among the measures of coherence is fairly possible as coherence is a subjective phenomenon which may be analysed differently.

To further validate the findings of Topic Based Analysis, Watson Todd (2016) conducted a comparative study of these four measures with Human Informants analysis. Seven educated native speakers were selected to analyse discourse topics through key words and topic boundaries. Findings showed that Lexical Cohesion Analysis produced a small correlation ($r = 0.26$; $p < 0.01$) with Human Informants whereas Topic Based Analysis showed a medium size correlation ($r = 0.31$; $p < 0.01$) with Human Informants which is slightly higher than the Lexical Cohesion Analysis. Topic Structure Analysis and Given-new measures did not show any correlation to identify key words with Human Informants. The variation in finding out key words between measures and Human Infants is due to the difference of focus. The measures only focus on the frequency of occurrence of words whereas Human Informants keep frequency as well as saliency in mind while assessing discourse topics. Hence, it is the latter which makes discourse topics analysis difficult through any computational method.

4.7 Reliability of the coherence measures

Reliability is the degree to which an assessment tool produces consistent and stable results. Inter-rater reliability of the coherence measures was assessed to find out the level of reliability of the measures. The written scripts were assessed by two raters. First, the researcher assessed all written scripts and then all scripts were assessed by a second rater with nine years' experience of teaching English as a second language and assessing ESL students' writing. The second rater had several discussions with the researcher and she was fully trained for the analysis. Initially she was given some general paragraphs for analysis and after that she analyses the original data. Pearson

product-moment correlation coefficients were calculated to measure the level of relationship, inter-rater reliability, between the scores produced by two raters. These are presented in the following tables.

Table 4.7: Inter-rater reliability of the measure of coherence

| Measures | Reliability |
|----------------------------|-------------|
| IELTS | .75* |
| Holistic Coherence Scale | .82* |
| Topical Structure Analysis | .81* |
| Topic Based Analysis | .71* |

*. Correlation is significant at the 0.01 level (2-tailed).

Table 4.7 shows the level of inter-rater reliability between the two raters for the four coherence measures. The findings suggest that all measures showed a reasonable level of inter-rater reliability with all correlations exceeding $r = .7$. Inter-rater reliability of the measures was assessed on the bases of marking scales used in the study except Topic Based Analysis. The inter-rater reliability of Topic Based Analysis was assessed on the total number of moves per t-unit.

The inter-rater reliability was also calculated for the sub-component parts of the measures of coherence used in the present study. Table 4.8 shows the level of inter-rater reliability for the sub-component parts of the Holistic Coherence Scale. All sub-component parts of the scale showed a reasonable level of inter-rater reliability, with all correlations greater than $r = .7$ except for the case of the Closure measure. Determining whether a text has a final summing-up statement related to the topic of the text may be an area that is subject to more disagreement among raters than other aspects of this scale. Despite this, the sub-component parts of the Holistic Coherence Scale seem to produce generally consistent assessments across the two raters.

Table 4.8: Inter-rater reliability of sub-component parts of Holistic Coherence Scale

| Sub-component parts | Reliability |
|---------------------|-------------|
| Focus | .86* |
| Context | .74* |
| Organisation | .72* |
| Closure | .62* |
| Cohesion | .78* |
| Grammar | .82* |

*. Correlation is significant at the 0.01 level (2-tailed).

Table 4.9 shows inter-rater reliability of the sub-component parts of Topical Structure Analysis. The sub-components of the Topical Structure Analysis showed a high level of inter-rater reliability, with all correlations greater than $r = .8$. These results suggest that the measures are reliable in terms of the assessment of coherence in adult ESL learners' writing.

Table 4.9: Inter-rater reliability of the sub-component parts of Topical Structure Analysis

| Sub-component parts | Reliability |
|-------------------------------|-------------|
| Parallel Progression | .96* |
| Sequential Progression | .95* |
| Unrelated Progression | .85* |
| Extended Parallel Progression | .94* |
| t-unit | .92* |
| Total Progression | .85* |

*. Correlation is significant at the 0.01 level (2-tailed).

Table 4.10 shows inter-rater reliability of the sub-component parts of Topic Based Analysis. The sub-component parts of the measures witnessed a high level of inter-rater reliability, with all correlations greater than $r = .7$. The results suggest that the measures are reliable in terms of the assessment of coherence in adult ESL learners'

writing and are consistent with Watson Todd (2016) where moves per t-unit showed higher level of reliability in terms of assessment.

Table 4.10: Inter-rater reliability of the sub-component parts of Topical Based Analysis

| Sub-component parts | Reliability |
|-----------------------|-------------|
| t-units | .92* |
| Total Number of Moves | .81* |

*. Correlation is significant at the 0.01 level (2-tailed).

CHAPTER FIVE

PREDICTORS OF SECOND LANGUAGE WRITING

5.1 Introduction

There has already been a detailed discussion in the first chapter regarding the complexity of the writing process. The process entails dealing with social, linguistic and cognitive influences, often simultaneously, which interact with each other. Therefore, researchers of writing (and those in related fields) have attempted to identify the predictors of writing quality, with the aim of making the complex writing process easier for the learners. As a result, several predictors of writing have been found which, if taught and/or practised, may lead to the production of higher quality texts.

This chapter will discuss those individual-ability predictors of writing quality that will form part of the current study. These predictors are morphological awareness, phonological awareness, orthographic awareness, vocabulary knowledge and grammatical competence. Each has been found to have either a direct and indirect impact on different aspects of writing, such as writing correct spelling, producing lengthy sentences, using complex sentences, and increasing use of appropriate/complex vocabulary in texts. These predictors, however, have not yet been assessed for their role in coherence building in the texts of adult ESL learners. The present study will investigate these skills as cognitive predictors of coherence in adult ESL learners' writing and examine how their relationship within writing and thus their predictive role in coherence construction in the texts of adult ESL learners.

5.2 Morphological awareness

Morphological awareness, an important element of language learning, is known as a “conscious awareness of the morphemic structures of the words and ability to reflect on and manipulate that structure” (Carlisle & Feldman, 1995, p. 195). Most studies on morphological awareness have investigated its effects on reading and a very thin volume of studies is available on writing (Boulware-Gooden et al., 2015). Furthermore, most of the available studies on writing have focused on first language young children, and there is a very limited number of studies that have explored the impact of morphological awareness on adult second language learners (Wagner et al., 2011).

Morphological awareness has been found to have positive effects on learning spelling in various studies (Berninger et al., 2010; Boulware-Gooden et al., 2015; McCutchen et al., 2014). To calculate the continuous growth rate of morphological, phonological and orthographic awareness across the grades from 1 to 6, Berninger et al. (2010) conducted a longitudinal study with 241 children in the USA. The results argued for the contribution of morphological awareness in both reading and spelling in young children. Findings revealed that both phonological and orthographic awareness showed continuity in their growth from grades 4 to 6 but with comparatively lower growth in grades 1 to 4. For the measures of morphological awareness, only derivational affixes (prefix and suffix) showed continuous growth up to grade 6. Therefore, the point at which morphological awareness shows developmental changes may differ from those found with both phonological and orthographic skills; and it cannot be assumed that morphological influences in young children will be the same with adults.

In another study, Boulware-Gooden et al. (2015) explored the role of morphology, phonology and orthography as predictors of spelling in English and Russian speaking children in 4 and 6 grades. Both morphology and phonology were predictors of spelling in English, whereas morphology and orthography were predictors of spelling in Russian. These differences may be due to the orthographic nature of both languages, since English is more opaque than Russian. Moreover, variations in instructional practices applied in the classroom may also account for some of these differences.

The contribution of morphological awareness has also been shown in the development of vocabulary knowledge. Zhang and Koda (2012), for example, conducted a study to test the role of morphological awareness in the development of second language vocabulary and reading comprehension amongst 130 students in a university at Shanghai in China. The study concluded that morphological awareness contributed significantly to the development of vocabulary knowledge in English as a second language.

In another study, Mochizuki and Aizawa (2000) investigated the correlation between Japanese English as a second language learners' vocabulary size and their knowledge of affixes (prefix and suffix). Participants, high school and university students, performed measures of vocabulary size and affixation. The results indicated not only a correlation between knowledge of affixation and vocabulary size, but also suggested that an increased knowledge of affixation helped these learners to guess correctly the meanings of unknown words.

Morphological awareness has also been investigated as a predictor of writing at word as well as text level. Northey et al. (2016) examined the relationship between

morphological skill and writing quality at word and sentence level. Participants, fifth and eighth grade students, were selected from 12 classrooms with different ethnic groups, but all monolingual English speakers. The result reinforced the view that complex morphological skills supported learners in producing quality written texts. Both morphological skill and writing fluency predicted scores on assessments of the organization and content of essay writing.

McCutchen and Stull (2015) also studied the effects of children's morphological awareness on spelling, particularly morphologically complex words, with special focus on derivational morphology. Derivational morphology is the process in which new words are formed by adding suffix or prefix to the root form of words, such as 'ness' in 'happiness'. Students were from fifth grade classrooms (aged on average 10 years and 11 months). The findings showed improvements in children's spelling of complex forms in a sentence combining task following morphological based instruction. The findings were also used to argue that increased morphological knowledge is an advantage to develop broader writing skills that include, but are not limited to, spelling.

In addition to writing, the effect of morphological awareness has also been found in the development of word-level as well as text level reading in novice readers. Saiegh-Haddad and Geva (2008) found morphological awareness was predictive of complex-word reading in both English and Arabic language measures given to bilingual children in third grade. In addition, Berninger et al. (2010) found that morphological awareness supports both the reading and spelling of complex words, and Carlisle (2000) presented evidence for the role of morphological awareness in the development of reading comprehension.

All the above studies related to morphological awareness and different language skills have documented the role of morphological awareness in the development of language skills. However, to the best of researchers' knowledge there has not been any study that has addressed the role of morphological awareness in the development of adult ESL learners' writing. Therefore, the present study will attempt to fill in this gap.

5.3 Phonological Awareness

Phonological awareness is known as “the awareness of the sound structure of words and the ability to manipulate sounds in words” (Smith, 2011, p. 9). Early acquisition of phonological awareness may be considered as an advantage to effective language learning, whereas late acquisition may cause deficit in language ability (see discussion in Snowling et al., 2000). This definition also suggests that phonological awareness may play a role in forming associations between basic sounds within a spoken word and the letters that make up the written form of a word. Phonological awareness has been found to be a predictor of the early stages of reading and writing, including in measures of spelling, word level reading and text comprehension (Snowling et al., 2000).

To examine the role of morphological, phonological and orthographic awareness in the development of spelling among native and non-native speakers of English, Zhao (2011) tested 339 Chinese first language learners of English studying in grade 8 in China, and 166 Native American English speaking students in grade 3. Participants were measured on their morphological, phonological and orthographic awareness skills. Results revealed orthographic awareness as the main contributor of spelling in Chinese, whereas phonological awareness was the main predictor in English language measures. Phonological awareness, moreover, was significantly correlated

with morphological awareness in the American Native English speaking group whereas morphological awareness and orthographic awareness were associated in the data produced by the Chinese learners. These correlations suggested that while phonological, morphological and orthographic awareness share some common features, each domain is likely to have its own unique role in language learning.

In another study, Mannai and Everatt (2005) investigated phonological processing skills as predictors of literacy among Arabic speaking Bahraini children. Children were selected from grade 1 to 3 of schools in Bahrain and the participants were tested on measures of single word reading, spelling and non-word reading, as well as measures of phonological processing. The results indicated that phonological awareness was a predictor of both reading and spelling performance of these Bahraini Arabic speaking children.

Phonological awareness has been documented as a predictor of writing in children. Mackenzie and Hemmings (2014) examined the role of phonemic awareness in the development of writing performance of children were aged from 4 to 6 years old, and English was their first language in ten kindergarten classrooms across a number of schools in New South Wales, Australia. Findings indicated a high correlation between oral language performance and writing development in these young children, as well as a correlation between phonological awareness and vocabulary knowledge. The findings are consistent with the study of Ehri and Roberts (2006) which found high correlation between vocabulary knowledge and phonological awareness.

Frost (2001) focussed on the relationship between phonological awareness, reading and spelling development and spontaneous writing. Participants were selected from grade 1 for this longitudinal study and they were observed up till grade 2. The

children were divided into two groups. The first group had 21 students with high phonological awareness at the time of selection, whereas group two consisted of 23 children with low phonological awareness. The children were tested six different times to examine the role of invented spelling in self-directed writing and how this might be related to the development of phonological awareness, reading and spelling in grade 1 and 2. Self-directed writing involves students being allowed to write freely by choosing their own topics, rather than being directed by the teacher. Results of the study found invented spelling in self-directed writing was a predictor of phonological awareness, spelling and later reading development in children, particularly for those with low phonological awareness.

The role of phonological awareness has been found in the development of grammar knowledge. Some studies, such as O'brien et al. (2006), attempted to find out the relationship between the two investigating the role of phonological awareness in the development of grammatical morpheme which help learners to change the tense. Grammatical morpheme can change the tense form of present simple by adding 's' or 'es'. For example, 'They do not like cricket but she likes'. In this sentence the verb form of 'like' has been changed according the subject of the sentence. The findings of O'brien et al. (2006) study showed that phonological awareness supported in learning morphological awareness.

The above studies have witnessed the role of phonological awareness in the development of spelling, writing and grammar knowledge in different contexts including native as well as ESL learners of English. Most of the studies cited above involved children as their participants and there remains a scarcity of studies comprised of adult learners. To the best of researcher's knowledge, there is not a single study that

has addressed the role of phonological awareness in the development of coherence in adult ESL learners' writing. Therefore, the present study will be the first of its kind.

5.4 Orthographic Awareness

Orthographic awareness is considered as the graphemic patterns of a written language and their mapping onto phonology, morphology, and meaning. Treiman and Cassar (1997, p. 631) classify orthographic awareness as “the understanding of the conventions used in the writing system of [the child's] language”. Orthographic awareness, however, is also characterised as the accuracy and rate at which children retrieve and produce letters (Karimi, 2013). In the line with these researchers' definitions, most of whom used spelling measures to assess learners' ability in orthographic awareness, it can be stated that orthographic awareness is the knowledge and manipulation of the conventions of writing system of a language.

Harrison et al. (2016) conducted research to assess potential predictors of spelling and writing in grade level 3 native speakers of English, and learners of English as a second language (ESL). The predictors of spelling and writing in the study included rapid naming, phonological awareness, single-word fluency, text spelling, handwriting fluency and paragraph writing fluency tasks. Results showed variance among native and ESL learners in terms of predicting writing quality. For native speakers vocabulary and rapid naming predicted variance in writing whereas rapid naming and syntactic awareness predicted writing in ESL learners. Orthographic awareness, however, was found to be a predictor of spelling in native as well as ESL learners of English. The findings suggest that orthographic awareness may improve learners' spelling which can further develop their writing skills since improved spelling helps in writing (Puranik & AlOtaiba, 2012).

In another study, Abu-Rabia (2001) explored the influence of different orthographies within and across the languages. The languages chosen for the study were English and Russian. The study was conducted in Israel with students (aged between 25 and 30 year olds) enrolled in university courses but who had completed their schooling in Russia. The findings indicated that orthographic awareness was a predictor of spelling ability in both languages. Orthographic awareness showed no cross-language relationships in contrast to phonological awareness and spelling skills. This suggests that orthographic awareness of first language may not be helpful for those learning a second language. Accordingly, orthographic awareness may not be expected to show as large a correlation as other language skills measures may have.

Puranik and AlOtaiba (2012) examined the role of spelling and handwriting in the development of writing skills in children in USA kindergartens, after accounting for literacy, cognitive skills and student characteristics. Writing skills were assessed for the total number of words and the total number of ideas expressed in writing within allocated time of 15 minutes. The total number of ideas is considered a good predictor of writing because learners struggling with writing usually produce short texts (Berman & Verhoeven, 2002). The total number of ideas were counted as indicative of the participants' liking or disliking the topic. Thus, one reason was taken as one idea. Results exhibited a very high correlation between total number of words and total number of ideas ($r = .94$). The findings suggest that total number of words and total number of ideas should be correlated with orthographic awareness measure in the study as well as total number of words may be expected to have correlation with coherence in adult ESL learners' writing.

Berninger et al. (1992) conducted a study investigating the effects of primary language skills such as phonological and orthographic awareness on the early stages among the beginner learners of English writing. Generally, it is believed that the lower-level developmental skills such as phonological and orthographic awareness do not require higher level thinking and, after certain period, can be produced effortlessly like any normal routine work. Thus, learners can focus on other processes of writing which require high level of thinking, such as organisation of ideas (Berninger et al., 1995). The organisation of ideas and fluency of writing were the measures to assess correlation between beginning skills and writing quality. Fluency was assessed with total number of words in the text which theoretically show that how easily a writer can produce words whereas number of complete clauses show the number of well-organised and complete ideas. Findings showed that good knowledge of primary skills such as phonological awareness, orthographic awareness facilitated higher level thinking, a pre-requisite required for planning and organising the text. Therefore, it may be assumed that language skills measures used in the study will show correlation with coherence.

Like morphological and phonological awareness, orthographic awareness has also been found a predictor of language learning skills. However, the contribution of orthographic awareness in the development of coherence construction in adult ESL learners' writing has not been documented so far and this present study aims to explore this deficit.

5.5 Vocabulary Knowledge

Diamond et al. (2008), describe vocabulary knowledge as a matter of comprehension of meaning of words in different contexts. According to Stahl (2003), vocabulary does not develop by cramming meaning of words from a dictionary. Rather,

it develops through several encounters with a word with its proper use in different contexts, with each encounter adding something to the previous meaning. Lu (2010) affirms that having a good vocabulary knowledge is considered as a good indicator of linguistic knowledge.

Isaacson (1988) and Diamond et al. (2008), however, offer a more productive view of vocabulary knowledge than the above mentioned receptive ones. They suggest that vocabulary is the learners' selection of words in spoken and written discourse. To convey a message effectively, a learner will need a good level of vocabulary. Combining this view with those expressed in the previous paragraph suggests that a lack of vocabulary may result in poor comprehension and poor text production.

Spurling (2014) conducted a study to correlate lexical diversity with writing quality in native and ESL learners of English. 'Lexeme' is another word that is frequently used for vocabulary and lexical quality is defined as, "Lexical quality (LQ) refers to the extent to which the reader's knowledge of a given word represents the word's form and meaning constituents and knowledge of word use that combines meaning with pragmatic feature" (Perfetti, 2007, p. 259). In addition to the meaning and use of a word in a context, lexical diversity also refers to the use of a variety of words from common to rarely used.

Lexical quality was measured with 'Lexical diversity' and 'maturity' in vocabulary. Diversity refers to the breadth of words, whereas maturity means 'sophisticated' use of words which is quite subjective variable though. Lexical diversity was measured by type and token ratio. Type refers to the grammatical class of a word such as noun, verb or adjective, whereas token is the instance or frequency of each type. For example, 'a rose is a rose'. In this sentence there are three types of words 'a', 'rose'

and 'is' whereas five tokens or occurrence. This means more variety of types witness more lexical diversity.

Findings exhibited that lexical diversity correlated with writing quality in both native and ESL learners. This finding predict that vocabulary knowledge should correlate with coherence in adult ESL learners' writing.

To examine the relationship between lexical diversity and holistic rating of a composition, Roessingh et al. (2015) asked 77 third grade students in Canada to write a composition on a given prompt. Lexical diversity was assessed by corpus based analysis through high and low-frequency words. High and low-frequency words were selected from British National Corpus. For holistic scoring a trait-based rubric HALT was used. Data analysis identified a correlation between lexical diversity and writing quality. These findings also predict for the vocabulary knowledge in the present study to have correlation with coherence development in adult ESL learners' writing.

To explore the effect of learning spelling on vocabulary knowledge, Chambré et al. (2017) conducted a study in which 45 participants were selected from the upper middle-class grade 1 in the USA. All participants were Native speakers of English. The participants were assessed for two different situations. In the first, students were presented a picture and a corresponding spelling beneath the picture. In the second situation, the picture was presented without a corresponding spelling. Post-test findings revealed that students remembered the words with picture and spelling even after two weeks of the study but forgot the words in the second situation where there were only pictures not spelling beneath the picture. Chambré's study found that while efficient readers benefitted more than less efficient readers, no relationship was found between spelling and meaning of new words.

Rosenthal and Ehri (2008) examined the effectiveness of spelling in improving memory to recall pronunciation and meaning of new vocabulary words. The participants were divided into two groups. The first group consisted of 20 second graders with an average age about 8 years. The second group had 32 five graders aged about 11 years. They were taught 2 sets of unfamiliar nouns with definitions and depiction through pictures. After the teaching period, students recalled words without spelling. Findings showed that spelling improved pronunciation and vocabulary as compared to no use of spelling. Those who had good spelling and reading at the time of selection outperformed those who had poor spelling and reading. Rosenthal and Ehri (2008) findings suggest that orthographic knowledge improves vocabulary learning as well as pronunciation.

These two studies, Chambré et al. (2017) and Rosenthal and Ehri (2008), identified a relationship between spelling and vocabulary knowledge. In the present study, orthographic awareness test is mainly based on spelling check, therefore, it is expected that orthographic awareness will have correlation with vocabulary knowledge in adult ESL learners' like it has in young children.

Phonological awareness has been documented as a predictor of vocabulary knowledge. Metsala (1999) examined the relationship between phonological awareness and vocabulary development in young children aged from three to six. The findings indicated that four to five years olds and first graders showed a relationship between phonological awareness and vocabulary development. Similarly, Farina and Lyddy (2011) also examined the relationship between phonological awareness and vocabulary knowledge in native speakers of English and ESL learners. Findings showed that both native speakers of English and ESL learners showed correlation between phonological

awareness and vocabulary learning. Thus, it is possible to posit a relationship between phonological awareness and vocabulary knowledge in adult ESL learners.

A growing body of literature reports the positive effect of vocabulary knowledge on language learning in terms of listening, speaking, reading and writing across learners of different ages and cultures. That said, notably the documented literature does not show any study that specifically explores the role of vocabulary knowledge on the development of coherent text in adult ESL learners – the primary focus of this present study.

5.6 Grammatical Competence

Canale (1983, p. 7) defined grammatical competence as “the knowledge of the features and rules of the language, including the lexicon, the syntax and the semantics”. According to Chin (2000), grammar is the knowledge of the sound, structure and meaning system of the language. The above definitions clarify that grammar knowledge lies in the understanding of the underlying rules of the language, which enable one to understand the meaning of the language. Moreover, grammar knowledge gives the learner a sense of correct and incorrect, appropriate and inappropriate use of the language in spoken as well as in written format (Wang et al., 2015). Grammar teaching has always been an inseparable part of second language teaching. Language teachers often argue that a good command of grammar knowledge makes the learners proficient and enables them to use the language efficiently (Erdos et al., 2010). Consistent with this, there is a large amount of literature available on different aspects of grammar teaching and their effects on language learning in both first and second language contexts (Berninger et al., 2011; Berninger et al., 1992; Grobe, 1981; Kim et al., 2013; McCutchen & Stull, 2015; O'brien et al., 2006; Wong, 2012). The cited studies confirm

that research on child-learning has gained more attention than studies involving writing amongst adult learners.

Andrews et al. (2006) conducted a review to analyse the effectiveness of grammar teaching on the writing of students ranging in age from 5 to 16 year old in English speaking countries including England, USA, Canada, Australia, New Zealand and some other Caribbean and South African countries. The two main aspects of grammar teaching considered were syntax and sentence-combining. Syntax means the correct word order in a sentence, such as clause and phrased or parts of speech, whereas sentence-combining means to join two sentences and make it a single sentence.

Interestingly in this field, between 1990 to 2000, 11 articles explored syntax while 18 articles were on sentence-combining. The results suggested that teaching of syntax did not improve writing performance and the teaching of sentence level grammar did not appear to support students in writing. The teaching of sentence-combining, however, had positive effects on students' writings. That said, it is important to bear in mind that these findings were mainly concentrated in USA studies making it difficult to generalise the findings beyond the USA.

Jones et al. (2013) argued that the teaching of grammar as a clear set objective is effective and improves learners' understanding of the writing system. Jones conducted his study in 8 schools randomly selected from a pool of 32 schools in England. Pre- and post-tests were analysed by independent ratters. Findings witnessed a positive effect of grammar teaching on writing. Importantly, skilled writers benefitted more than less skilled writers. Thus, Jones' study supports the view that grammar teaching helps the students to improve their writing skills.

To find out the positive effect of grammar teaching on Dyslexic learners, McCormack-Colbert et al. (2018) conducted an action study involving five dyslexic students who were struggling with writing. They were taught grammar to improve their writing skills. Pre- and post-tests were conducted to identify the achievements of the learners. The findings suggested that students with Dyslexia improved their writing with the help of grammar teaching. Moreover, in a semi-constructed interview, participants had a very positive view of the grammar teaching method and acknowledged that it had helped them better understand the writing process.

These studies documented grammar knowledge as predictor of writing quality which may be used to predict that grammar knowledge measures of the present study will also correlate with coherence measures in adult ESL learners' writing.

5.7 Summary

In this chapter five language skills have been discussed i.e., morphological awareness, phonological awareness, orthographic awareness, vocabulary knowledge and grammatical competence as predictors of language learning. These five skills have been considered in relation to both first and second language learners of English. The review was conducted particularly about the role of these language skills in the development of writing and the previous studies documented on these language skills support the view that these skills help improving learners' language ability. Most of the studies assessed these language skills in relation to the writing of young children participants and, to the best of researcher's knowledge, none addressed the language skills in relation to Coherence development in adult ESL learners' writing. This study will address this gap in the existing body of literature. Moreover, the above cited studies

will inform in the discussion chapter wherein their findings will be compared in relation to those of the present study.

CHAPTER SIX

RESEARCH METHODOLOGY

6.1 Introduction

The aim of this chapter is to describe the research design that was carried out in the present study. The chapter describes the context of the study, the participants and their selection criteria, their gender and year of experience learning English as a second language. It also defines the language skills measures used in the study: i.e., measures of morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence.

6.2 Research Design

The fundamental purpose of this research was to determine the relationships between the language skills stated above and the measures of coherence assessed in adult ESL learners' writing. For this purpose, a quantitative paradigm was used as quantitative paradigm is deemed to be the best way to investigate the level of relationship between two different variables (Muijs, 2010). Babbie (2015) also described the usefulness of quantitative research to determine correlations between variables, and noted that such research has the advantage of dealing with phenomena objectively. Moreover, quantitative methods are better able to analyse data from a large number of participants, and potentially increases the likelihood of the findings to be generalised to specific populations.

As the objective of the study was to describe the relationship between variables in a natural setting without any manipulation, a descriptive research method was used (Thakur, 2009). A descriptive method does not attempt to explain cause and effect of a

phenomenon, rather it simply explains what the phenomenon is. This quality best suited to the present research because the purpose of the study was to describe whether selected language skills support adult ESL learners in their production of coherent text, rather than attempting to identify a cause of coherence.

6.3 Context of the study

The history of English language dominance in Pakistan dates back to the colonial era of British rule over the sub-continent. English was the language of rulers and had an influence over all other local languages, including Hindi and Urdu (Turi et al., 2013). As the language of the ruling class, it enjoyed a supreme status among the local people and became a source to establish relations with the rulers and to secure higher positions in royal courts. The part of the sub-continent that is now Pakistan was also highly influenced by the language of rulers.

Urdu is the national language of Pakistan and the language of Education, but English has also occupied the status of being the language of education and other official language of communication (Shamim, 2008). It has been declared a compulsory subject from the year one of school to university education (Ministry of Education, 2006). English continues to be taught as a subject at every level of education in the country.

Proficiency in English is also considered a key to success in practical life. A good speaker of English has an increased chance to occupy higher positioned jobs in the country (Ghani, 2003). A student who is well-proficient in English is considered very intellectual and respected by the teachers. English, therefore, has become somewhat of a status-symbol in Pakistan. Those who can speak English well are likely

to be given due respect in the society and considered highly intellectual and a well-educated person (Mahboob, 2002). The Ministry of Higher Education in Pakistan has also declared English language proficiency as one the essential requirements for the recruitment of university lecturers in Pakistan.

As English is taught as a compulsory subject across all educational levels, students are expected to be well-proficient in all four skills of language learning which are listening, speaking, reading and writing. Before students start their university education, they are taught necessary skills to read and write in English. According to the benchmarks set by the Pakistani Education Policy of 2006, students should be expected to produce coherent and error free pieces of written text.

6.4 Data Collection

The writing samples and data from the measures of linguistic skills used in the present study were collected as part of a previous study. These data were collected in Pakistan by Athar Munir Siddiqui and Dr. Amir Sadeghi. Athar Munir Siddiqui worked as a Ph. D scholar with Professor John Everatt (my principal supervisor) and Dr. Amir Sadeghi (my co-supervisor) who worked as a co-investigator for the data collection. Therefore, the present study was a secondary analysis of these data, but focused on a novel assessment of the writings of the students when assessing coherence in the adult ESL learners' writings. The previous research had not assessed coherence, nor had it considered the linguistic measures as potential predictors of coherence. Rather the previous research had focused on a general assessment of the quality of the essay writing of the students, rather than the specific features of coherence. Therefore, the coherence analysis performed as part of this study was the novel analysis, and hence a major part of the current work focused on these coherence analyses.

6.5 Participants of the Study

One hundred and twenty-seven (127) participants were selected for the present study. Out of that total, 59 male and 68 female students participated in the study. The students' ages varied from a minimum of 18 years to a maximum of 28 years, with 21.14 as the mean age: this was based on the information provided by the participants themselves in a background questionnaire. All students were multilinguals, with the majority using Punjabi as their mother tongue, but other local languages being used by a number of the participants, including Saraiki and Rotaki. All participants were able to communicate in Urdu, the national language of Pakistan.

The data were collected from 6 different government institutions in Punjab, a province of Pakistan. Punjab has the highest literacy rates in Pakistan: this was 64.7 % in 2018 (Education in Pakistan, 2020). The institutions were also selected based on ease of accessibility and consent from the institutions; they were assured that their names will be kept secret and will not be used by the researchers after data collection had been completed. Government institutions were selected instead of private ones because all government institutions follow same syllabus and standards set by Government Education Board, whereas private institutions differ in their curriculum and standards for teaching English.

All the participants of the study were university students enrolled in second year of graduation which means they had at least 12 years' experience of learning English as a second language since English is taught from year one of school. The students of this grade were selected because according to the standards set by Pakistan National Curriculum (Ministry of Education, 2006), the students had already been taught how to produce a well-connected coherent text. The following standards from National

Curriculum for English Language grades I-XII (Ministry of Education, 2006, pp. 127-131) state:

National curriculum for English Language grades I – XII (2006), Competency 2 writing, Benchmark 1, students of Intermediate (12) grade are supposed to display all necessary writing skills such as brain storming, mind mapping, transitional devices, key ideas, grammar, syntactic maturity and variety etc.

National Curriculum for English language (2006), Competency 2 writing, Benchmark IV, students of Intermediate grade are supposed to produce coherent, cohesive, organised text with proper signalling and reference words.

6.6 Background Questionnaire

Before the data collection process, a background questionnaire was given to all participants asking for some personal information, including their gender, age, language learning experience and contact information. Participants were also assured that their identity would be kept secret and would not be reported in any materials produced as part of the research.

6.7 Ethical Approval

As mentioned earlier that already collected data were used for this study, therefore, the participants were anonymous to the present researcher. Ethical approval for the current secondary analysis was sought from the Educational Research Ethic Committee (ERHEC), and the committee responded that additional ethical approval was not required as the data were already collected and participants were anonymous to the present researcher. (The email copy of notification has been enclosed in

Appendix C). However, approval was obligatory from the ones who collected the original data. So, the researcher got approval from Athar Munir Siddiui and Dr. Amir Sadegi. (The written approval letters have been enclosed in the Appendix A & B)

6.8 Instruments

Different instruments were used as part of the original data collection. The following tests were administered to elicit information from the participants regarding the set of language skills measures which are the independent variables in the study. These language skills measures included morphological, phonological, and orthographic awareness, vocabulary knowledge and grammatical competence.

6.8.1 Morphological awareness test

Morphological awareness testing was used to obtain information about a learner's capability to understand how words are broken down into smaller units of meaning such as roots, prefixes, and suffixes. (Berninger et al., 1995; Berninger et al., 1992; Boulware-Gooden et al., 2015; Carlisle & Feldman, 1995; Harrison et al., 2016; Lisa-Schano, 2015). In these tests learners are given one part of speech with a base form such as 'teach' and they are asked to write another part of speech such as noun from verb by using their morphological awareness knowledge. In the present study, participants were given 20 questions for morphological awareness test in which a base word was given such as 'teach' and they were asked to write another word from this base form by using their morphological awareness knowledge such as 'teacher' or 'teaching'. Each question had one mark for the correct answer while no marks for the incorrect ones.

Example:

Profession _____

The correct answer may be ‘professional, professionally’.

6.8.2 Phonological awareness test

Phonological awareness tests have widely been used to assess learners’ ability to comprehend the sound pattern of the language (Ball, 1993; Mackenzie et al., 2013; Mannai & Everatt, 2005; Tomas et al., 2015). In the test used to produce the current data, participants were given pairs of pseudo-words and were supposed to choose the made-up word that sounded like a real English word. In the present study, participants were given 20 sets of pseudo-words from which to select the correct item. Each question contained one mark for the correct answer and zero for incorrect.

Example:

Nale Pult

The correct answer is “Nale” because it sounds like “Nail” whereas “Pult” does not sound like a real word.

6.8.3 Orthographic awareness test

In the present study, orthographic awareness was based on the ability to identify correct spellings. This was chosen since correct spelling is considered a predictor of good writing, and poor spelling is related to deficit in writing skill; and therefore, spelling tests have been used in a number of studies to predict writing quality (Berninger, Vaughan, et al., 2002; Garcia et al., 2010; Harrison et al., 2016; Sunseth &

Greig Bowers, 2002). In the test used in the current study, participants were given 20 items that comprised of a pair of words, one of which was an incorrect spelling while the other was a correct spelling. They were asked to choose the word with the correct spelling. Each question had one mark for the correct answer and zero for incorrect answer.

Example:

Munk *_Monk_*

Blume *_bloom_*

The correct answers here were ... These are the correct answers because ...

6.8.4 Vocabulary knowledge test

Several studies have used vocabulary tests to determine a learners' store/knowledge of words (Grobe, 1981; Hemphill & Tivnan, 2008; Lawrence, 2012; Morris & Cobb, 2004; Muncie, 2002; Stahl, 2003). Typical vocabulary tests require participants to either write a given word's meaning or select the meaning of a given word from a set of options. In the present study participants were given 50 word followed by four possible meanings of each word. They were supposed to choose the closest meaning from the given options. Each question contained one mark for the correct and zero for incorrect answer.

Example:

Rich:

- a. no money at all b. have a lot of money*
c. feel happy d. feel sad

The correct answer is 'b'.

6.8.5 Grammatical competence test

A grammar test was also included in the present study because these measures have also been proved useful to analyse a learner's writing quality (Celce-Murcia, 2002; Chin, 2000; Davis & Mahoney, 2005; Jeyaraj, 2010). In the present study, learners' grammatical proficiency was assessed through using the correct form of grammar, use of article, and subject-verb agreement. Participants were given 20 questions that required the participant to read sentences with four given words or phrases. Out of these four words/phrases, one comprised the correct use of grammar and the students were asked to choose the correct word/phrase to fill the given blank. Each question contained one mark for the correct answer.

Example:

How many girls in this college _____ from Bahawalpur city?

- a. come b. will have come c. came d. coming*

The correct option is 'a' because it fits in the grammatical structure of the given sentence.

6.8.6 Composition test.

For coherence analysis of adult ESL learners' writing, participants were asked to write an essay of around 250-300 words on a given topic. Students were asked to read a story about the adventures of wild life. After reading, then they were asked to describe the incidents in their own words as the purpose was to assess their skills in the development of a coherent text. They were given an hour to write their essay and were told to use this time whatever way they chose. They were told that the essays would be assessed on several factors including meaningfulness and appropriate use of English. The topic was selected pondering that students may be familiar with the wildlife. The essays were handwritten on a given sheet. As some of the writings were not easy to read and each essay was to be read for four times to mark for each measure of coherence, the essays were transcribed on a computer and copied for assessment. However, every effort was made to keep the transcript like original handwritten essays without any change to get the sense of original writing of the participants and to analyse the grammatical errors. The same transcripts were copied and shared with the second rater to count for the inter-rater reliability for the measures of coherence.

Table 6.1: Instruments developed and used in the present study

| Skills | Items |
|-------------------------|---------------------------------|
| Morphological awareness | 20 |
| Phonological awareness | 20 |
| Orthographic awareness | 20 |
| Vocabulary knowledge | 50 |
| Grammatical competence | 20 |
| Essay | An essay of about 250-300 words |

CHAPTER SEVEN

DATA ANALYSIS AND RESULTS

7.1 Introduction

This chapter focuses on the results of correlational analyses between the scores on the coherence analysis of texts written by adult ESL learners and the measures of morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence. The latter five measures will be referred to as a group in terms of language skills, since they each assess an aspect of processing oral or written language. Pearson product-moment correlation coefficients were used in each case. See Appendix D for Spearman correlation equivalents. Note that these produced very similar results to the Pearson correlations, suggesting that any violations to the assumptions specific to Pearson correlations were minor and would not have a major impact on interpretations and conclusions. These were calculated using IBM SPSS Statistics version 25 and interpretations of the size of correlation coefficients were based on Cohen (2013): i.e., a small correlation would be between 0.1 and 0.29; a medium correlation would be between 0.3 and 0.49; and a large correlation would be greater than 0.5.

The data were analysed based on the research questions of the study. The first analyses were performed to find out the level of correlation among the language skills measures used in the study. These were then correlated with the four measures of coherence used in the study to identify potential predictors of coherence, which was one of the main purposes of the study. Correlation analyses were also carried out among the four measures of coherence to determine their level of agreement.

Another purpose of the study was to investigate relationships among the underlying sub-components used to calculate levels of coherence. Based on the specific theory upon which the measure of coherence is based, these sub-components contribute to coherence in the written essays of adult ESL learners. Therefore, the sub-components used to produce an overall coherence score were also investigated for potential associations across the different measures of coherence to determine if one or more of these sub-components are consistent assessments of coherence levels. The sub-components of each coherence measure were also correlated with language skills measures to further investigate potential predictors of coherence. Sub-components of the coherence measures were also correlated with one another to find out the relationships among all potential aspects of coherence.

The findings of these correlation analyses can be found in the following sections.

7.2 Analysis of variables

7.2.1 Research question 1

Are there relationships between the language skills measures of morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence and different assessments of coherence in adult ESL learners' writing?

Table 7.1 presents the Pearson product-moment correlation coefficients calculated to identify relationships among the measures of morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence. Morphological awareness showed large, positive correlations with vocabulary knowledge and grammatical competence ($r = .54$ and $r = .59$ respectively, $n = 127$, $p <$

.01 in both cases). Most of the correlations suggested medium relationships with one another but with the exception of the grammatical competence measure, which exhibited small correlations with phonological and orthographic awareness ($r = .27$ and $r = .25$ respectively, $n=127$, $p < .01$ in both cases).

The findings indicate overall medium relationships between these measures. This suggests that the language skills that they are assessing are inter-related, as expected from a set of skills that focus on language ability. However, the findings also suggest that these skills are somewhat independent of each other, consistent with the aim of measuring a range of language skills.

Table 7.1: Correlations between the measures of language skills

| | MA | PA | OA | VK | GC |
|-------------------------|-------|-------|-------|-------|----|
| Morphological Awareness | - | | | | |
| Phonological Awareness | .35** | - | | | |
| Orthographic Awareness | .24** | .40** | - | | |
| Vocabulary Knowledge | .54** | .33** | .32** | - | |
| Grammatical Competence | .59** | .27** | .25** | .39** | - |

**Correlation is significant at the 0.01 level (2-tailed).

MA=Morphological Awareness

PA= Phonological Awareness

OA= Orthographic Awareness

VK= Vocabulary Knowledge

GC= Grammatical Competence

Note: See Appendix D for Spearman correlation coefficient.

Table 7.2 displays the correlations between the measures of morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence and the four measures of coherence (the IELTS assessment, Holistic Coherence Scale, Topical Structure Analysis and Topic Based Analysis) used in the study. The results indicate that overall morphological awareness, vocabulary knowledge and grammatical competence show positive correlations across the

coherence measures. These are generally higher than those found for the phonological and orthographic awareness measures. However, the size of the correlations varies across all the measures. Morphological awareness, vocabulary knowledge and grammatical competence show medium size correlations with the IELTS assessment and the Holistic Coherence Scale. Morphological awareness shows the largest correlation with the IELTS scores: that is $r = .46$, $n = 127$, $p < .01$. Scores produced by the Topical Structure Analysis and the Topic Based Analysis, however, show small correlations with morphological awareness, vocabulary knowledge and grammatical competence. The measures of phonological and orthographic awareness show small correlations with three of the measures (IELTS, Holistic Coherence Scale and Topic Based Analysis) but near-zero correlations with Topical Structure Analysis. These findings suggest that coherence in adult ESL learners writing is more likely associated with morphological awareness, vocabulary knowledge and grammatical competence, which seem more clearly linked to the processing of meaning than phonological and orthographic awareness.

Table 7.2: Correlations of language skills measures with the coherence measures

| | MA | PA | OA | VK | GC |
|----------------------------|-------|-------|------|-------|-------|
| IELTS | .46** | .21* | .17* | .36** | .35** |
| Holistic Coherence Scale | .37** | .26** | .21* | .36** | .39** |
| Topical Structure Analysis | .21* | -.03 | -.00 | .27** | .14 |
| Topic Based Analysis | -.17* | -.10 | -.15 | -.11 | -.15 |

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

MA= Morphological Awareness

PA= Phonological Awareness

OA= Orthographic Awareness

VK= Vocabulary Knowledge

GC= Grammatical Competence

Note: See Appendix D for Spearman correlation coefficient.

7.2.2 Research question 2

What is the level of correlation among the measures of coherence used in this study?

Table 7.3 outlines the correlations between the four measures of coherence used in the study. There was a large positive correlation between the IELTS measure and the Holistic Coherence Scale ($r = .59$, $n = 127$, $p < .01$). The Topic Based Analysis showed negative medium size correlations with the Holistic Coherence Scale and the Topical Structure Analysis ($r = -.45$ and $r = -.44$ respectively, $n = 127$, $p < .01$ in both cases), which were slightly larger than the correlation with the IELTS measure ($r = -.37$, $n = 127$, $p < .01$). The Topical Structure Analysis produced medium relationships with the IELTS and the Holistic Coherence Scale scores ($r = .34$, $n = 127$, $p < .01$ in both cases). These findings suggest that in spite of analysing coherence in a different way from one another, all these measures share some commonalities. However, there is also a great deal of independence between the measures, suggesting that they are not necessarily measuring the same construct. These findings are consistent with previous views (see introduction) that coherence is not a simple concept and that there are different perspectives on what comprises text coherence. All four measures have been used widely in the literature (and in practice), but they are measuring somewhat different things in the texts that they are being used to assess. We will return to this discussion point in the final chapter.

Table 7.3: Correlation of all measures of coherence

| | IELTS | HCS | TSA | TBA |
|-------|--------|--------|--------|-----|
| IELTS | - | | | |
| HCS | .59** | - | | |
| TSA | .34** | .34** | - | |
| TBA | -.37** | -.45** | -.44** | - |

**Correlation is significant at the 0.01 level (2-tailed).

HCS = Holistic Coherence Scale

TPA = Topical Structure Analysis

TBA = Topic Based Analysis

Note: See Appendix D for Spearman correlation coefficient.

7.2.3 Research question 3

Are there relationships between the sub-components of the measures of coherence used in this study and the measures of morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence?

Table 7.4 shows the correlations between the measures of morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence and the progressions sub-components of the Topical Structure Analysis (i.e., parallel progression, sequential progression, extended parallel progression, unrelated progression and total number of progressions in each essay).

The findings reveal relatively small relationships between the sub-components of the Topical Structure Analysis and the language skills measures used in the study. Only unrelated progression shows a negative, medium correlation with vocabulary knowledge ($r = -.31$, $n = 127$, $p < .01$): i.e., those with low levels of vocabulary seem to be more likely to produce unrelated progressions in their written text. The sequential progression scores were most related to morphological awareness and vocabulary knowledge; although these were small correlations. In contrast, parallel progression

showed most relationships with phonological awareness and orthographic awareness; again, small correlations though. Extended parallel progression and the total number of progressions in each essay produced near-zero correlation with most of the language skills measures. These results argue for small relationships between the language skills measures and the progression components of the Topical Structure Analysis.

Table 7.4: Correlations of language skills measures with the sub-components of the Topical Structure Analysis

| | MA | PA | OA | VK | GC |
|-------------------------------|-------|------|-------|--------|------|
| Parallel Progression | .15 | .20* | .28** | .10 | .19* |
| Sequential progression | .25** | .02 | .02 | .24** | .15 |
| Extended parallel progression | -.02 | -.09 | .01 | -.03 | .09 |
| Unrelated progression | -.20* | -.09 | -.09 | -.31** | -.17 |
| Total progressions | .07 | .01 | .10 | .00 | .11 |

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

MA=Morphological Awareness

PA= Phonological Awareness

OA= Orthographic Awareness

VK= Vocabulary Knowledge

GC= Grammatical Competence

Note: See Appendix D for Spearman correlation coefficient.

Table 7.5 presents the correlations between the measures of morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence and the sub-components of the Holistic Coherence Scale: i.e., focus, context, organisation, closure, cohesion and grammar errors. As can be seen, most of the sub-component of the Holistic Coherence Scale show the larger correlations with the morphological awareness, vocabulary knowledge and grammatical competence measures. Focus, organisation and closure show medium size correlation with morphological awareness and vocabulary knowledge; and the first two sub-components also show medium correlations with grammatical competence. Context, cohesion and grammar errors generally show small correlations with all the language skills measures; though cohesion and vocabulary knowledge show a medium correlation. All sub-

components of the Holistic Coherence Scale show small correlations with the phonological and orthographic awareness measures. Overall, these correlations argue associations between several sub-components of this coherence scale and more meaning-based language skills (vocabulary and morphology). The larger relationships with Focus, Organisation and Closure.

Table 7.5: Correlation of language skills measures with the sub-components of the Holistic Coherence Scale

| | MA | PA | OA | VK | GC |
|---------------------|-----------|-----------|-----------|-----------|-----------|
| Focus | .43** | .28** | .20* | .42** | .37** |
| Context | .25** | .23** | .12 | .24** | .28** |
| Organisation | .41** | .24** | .10 | .34** | .41** |
| Closure | .36** | .17* | .09 | .41** | .23** |
| Cohesion | .24** | .17 | .18* | .33** | .25** |
| Grammar | -.26** | -.09 | -.02 | -.23** | -.28** |

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

MA=Morphological Awareness

PA= Phonological Awareness

OA= Orthographic Awareness

VK= Vocabulary Knowledge

GC= Grammatical Competence

Note: See Appendix D for Spearman correlation coefficient.

Table 7.6 shows the correlations between the measures of morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence and the sub-components of the Topic Based Analysis: i.e., the total number of moves in each essay and the total number of t-units in each essay. The results indicate that both sub-components of the Topic Based Analysis produced small or near-zero correlations with language skills measures. The findings suggest that the sub-components of this coherence scale do not seem to rely on the language skills assessed in the current study.

Table 7.6: Correlation of language skills measures with the sub-components of the Topic Based Analysis

| | MA | PA | OA | VK | GC |
|-------------------------|------|------|------|------|------|
| Total number of moves | -.05 | -.02 | .09 | -.02 | -.06 |
| Total number of t-units | .03 | .03 | .18* | .02 | .02 |

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

MA= Morphological Awareness

PA= Phonological Awareness

OA= Orthographic Awareness

VK= Vocabulary Knowledge

GC= Grammatical Competence

Note: See Appendix D for Spearman correlation coefficient.

7.2.4 Research question 4

What are the relationships between the sub-components of the different coherence scales and the scales themselves?

Table 7.7 presents the correlations between the Holistic Coherence Scale and its sub-components: i.e., focus, context, organisation, closure, cohesion and grammar error. The results indicate large correlations between the Holistic Coherence Scale and all of its sub-components, except grammar error. There were also mainly large correlations between the sub-components; again with the exception of the grammar error sub-component which shows small correlation with all the other scales.

Table 7.7: Correlations between the Holistic Coherence Scale and its sub-components

| | HCS | Focus | Context | Organisation | Closure | Cohesion | Grammar |
|--------------------------|-------|-------|---------|--------------|---------|----------|---------|
| Holistic Coherence Scale | - | | | | | | |
| Focus | .71** | - | | | | | |
| Context | .67** | .49** | - | | | | |
| Organisation | .70** | .66** | .53** | - | | | |
| Closure | .63** | .50** | .48** | .54** | - | | |
| Cohesion | .65** | .51** | .61** | .46** | .56** | - | |
| Grammar | -.19* | -.20* | -.14 | -.19* | -.09 | -.17 | - |

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Note: See Appendix D for Spearman correlation coefficient.

Table 7.8 shows the correlations between the Topical Structure Analysis and its sub-components: i.e., parallel progression, sequential progression, extended parallel progression and unrelated progression. As can be seen, the main sub-component in terms of its association with the Topical Structure Analysis is the sequential progression calculation ($r = .70$, $n = 127$, $p < .01$). This appears to be the most influential aspects of this coherence analysis, at least for the current sample of written texts.

Table 7.8: Correlation between Topical Structure Analysis and its sub-components

| | TSA | PP | SP | EPP | UP |
|-------------------------------|--------|--------|--------|------|----|
| Topical Structure Analysis | - | | | | |
| Parallel progression | .02 | - | | | |
| Sequential progression | .70** | .30** | - | | |
| Extended parallel progression | .26** | .28** | .50** | - | |
| Unrelated progression | -.44** | -.25** | -.27** | -.09 | - |

**. Correlation is significant at the 0.01 level (2-tailed).

TSA=Topical Structure Analysis

PP= Parallel progression

SP= Sequential progression

EPP= Extended parallel progression

UP= Unrelated progression

Note: See Appendix D for Spearman correlation coefficient.

Table 7.9 presents the correlations between the Topic Based Analysis and its sub-components: the total number of moves and the total number of t-units. The analyses indicate that both sub-components produced small to medium correlations with the Topic Based Analysis of coherence.

Table 7.9: Correlation between Topic Based Analysis and its components

| | Topic Based Analysis | Total number of moves | Total number of t-units |
|-------------------------|----------------------|-----------------------|-------------------------|
| Topic Based Analysis | - | | |
| Total number of moves | .30** | - | |
| Total number of t-units | -.28** | .79** | - |

**. Correlation is significant at the 0.01 level (2-tailed).

Note: See Appendix D for Spearman correlation coefficient.

Table 7.10 shows the correlations between the sub-components of the Topical Structure Analysis, the Holistic Coherence Scale and the Topic Based Analysis. These results indicate a large range of relationships between the sub-components, with no obvious pattern of inter-relationship, which suggests (as in the analyses of the total coherence scores) a large level of independence between the different measures of coherence: there is no obvious feature that could be said to be measuring the same underlying skill or construct. There are a couple of correlations greater than 0.5, between total number of moves (Topic Based Analysis) and the number of parallel progressions and Extended Parallel progressions (Topical Structure Analysis), but the total number of moves scores show little relationship with any other sub-component. The number of parallel progressions shows medium to large correlations with some aspects of the Holistic Coherence Scale (specifically Cohesion and Context), but produces small correlations with the other sub-components of the same scale. The unrelated progression scores do show a pattern of correlations with the Holistic Coherence Scale sub-components around 0.2 and 0.3, which may indicate a small to medium relationship here, but both the sequential progression and extended parallel progression scores show generally small correlations with the sub-components of the Holistic Coherence Scale. Again, there is no obvious pattern of inter-relationships that would suggest some common underlying construct is being reliably assessed by the measures.

Table 7.10: Correlations between sub-components of the Coherence measures of the study

| | PP | SP | EPP | UP | Focus | Context | Organisation | Closure | Cohesion | Grammar | TNM |
|--------------|--------|--------|-------|--------|-------|---------|--------------|---------|----------|---------|-----|
| PP | - | | | | | | | | | | |
| SP | .30** | - | | | | | | | | | |
| EPP | .28** | .50** | - | | | | | | | | |
| UP | -.25** | -.27** | -.09 | - | | | | | | | |
| Focus | .29** | .19* | -.02 | -.38** | - | | | | | | |
| Context | .40** | .34** | .22* | -.27** | .49** | - | | | | | |
| Organisation | .27** | .18* | -.03 | -.34** | .66** | .53** | - | | | | |
| Closure | .26** | .22** | .02 | -.26** | .50** | .48** | .54** | - | | | |
| Cohesion | .54** | .29** | .17* | -.36** | .51** | .61** | .46** | .56** | - | | |
| Grammar | .02 | -.12 | .11 | .21* | -.20* | -.14 | -.19* | -.09 | -.17 | - | |
| TNM | .51** | .24** | .51** | .15 | -.14 | .06 | -.21* | .00 | .14 | .20* | - |

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

PP= Parallel Progression

SP= Sequential Progression

EPP= Extended Parallel Progression

UP= Unrelated Progression

TNM= Total number of Moves

Note: See Appendix D for Spearman correlation coefficient.

7.3 Regression Analysis

Regression analyses were performed to identify the amount of variability in the coherence measures explained by the five language skills measures employed. These five language skills (explained earlier) were treated as Independent Variables (IV), whereas four different measures of coherence were treated as Dependent Variables (DV) in the analyses.

Two methods for regression analyses were used. In the first method, a standard multiple regression analyses were conducted for all language skills (IV) and each measure of coherence. Tables for the regression analyses can be found in Appendix E. These also include calculations of beta values to show the potential contribution of each language skill measure to the coherence measure taking the other language skills measures into account. VIF and Tolerance values are also presented to show that multicollinearity is unlikely to be a problem for interpretation of results. In the second, stepwise multiple regression analyses were performed. The rationale behind using the first method was to assess the level of contribution of all language skills in the development of coherent text in adult ESL learners. The purpose of employing the second method was to ascertain which variable best predicted the development of coherence in adult ESL learners' writing.

The findings from the standard multiple regression analyses indicated that for the IELTS measure about 24% of the variability in the coherence measure could be predicted from the language skills measures ($R^2 = .242$, $p < .001$). The same analysis for the Holistic Coherence Scale suggested that about 22% of the variability in the measure of coherence could be explained from the five language skills measures ($R^2 = .224$, $p < .001$). For the Topical Structure Analysis, the analysis indicated that about

11% of the variability in the coherence measures could be explained by the language measures ($R^2 = .107$, $p = .017$). Finally, the analysis for the Topic Based Analysis suggested that less than 5% of the variability in the coherence measure could be explained by the language measures ($R^2 = .048$, $p = .304$).

The findings of stepwise multiple regression analyses showed that for the IELTS coherence measure, morphological awareness predicted about 24% of the variability ($R^2 = .214$, $p < .001$), but no other measure entered the stepwise analysis. For the Holistic Coherence Scale, two predictors of coherence were entered, grammatical competence first, explaining about 16% of the variability ($R^2 = .157$, $p < .001$) and vocabulary knowledge, which added an additional 5% of variability explained (two-measure model, $R^2 = .207$, $p = .006$). For the Topical Structure Analysis, only vocabulary knowledge entered the analysis as a predictor, explaining about 7% of the variability in coherence ($R^2 = .074$, $p = .002$). Finally, for the Topic Based Analysis, the stepwise regression led to only the morphological awareness measure entering the model and predicting only 3% of the variability in the coherence measure ($R^2 = .031$, $p = .048$).

The findings suggest that the language skills measures do not explain too much variability in the measures of coherent text in adult ESL learners' writing: the largest level of contribution was found for the IELTS measure but this was still only 24% of the variability explained. In the stepwise multiple regression analyses, morphological awareness was a significant predictor of variance in the IELTS and Topic Based Analysis measures of coherence, whereas for the Holistic Coherence Scale and Topical Structure Analysis vocabulary knowledge was a significant predictor. Variability in the Holistic Coherence Scale was also explained by the grammatical competence measure.

Although the level of variability explained was not very high, the findings were consistent with the correlation analyses that indicated small but significant relationships between the coherence measures and three of the language skills measures: morphological awareness, vocabulary knowledge and grammatical competence.

These regression analysis findings indicate that the language skills do not contribute much in the development of coherent text in adult ESL learners' writing with regard to the coherence measures used in this study. However, results also indicate that holistic measures such as IELTS and Holistic Coherence Scale witnessed higher contributions from these language skills than measures focusing on textual features of coherence. It is possible that knowledge of such language skills will assist learners to develop certain aspects of coherent text writing.

CHAPTER EIGHT

DISCUSSION

8.1 Introduction

Starting with a general overview of the findings, this chapter discusses the possible reasons for these findings in the light of the theoretical background, and the findings reported in previous studies available in the documented literature. The chapter outlines the theoretical and pedagogical implications of this study and also notes its limitations. It concludes with suggestions for future research.

8.2 Overview of findings

The study investigated language skills, namely morphological, phonological, orthographic awareness, vocabulary knowledge and grammatical competence, as potential predictors of coherence in adult ESL learners' writing. The study was conducted in a Pakistani context with 127 university students, male and female, each of whom had almost 12-year exposure to learning English as a second language. The participants, all of whom were studying in government institutions, were in their first year of university education and had been taught the pre-requisite composition skills necessary to producing coherent essays. According to the information provided by participants in the background questionnaire, most of them were multilingual, having proficiency in Punjabi, Saraiki, Rotaki and Urdu.

Coherence analysis of the essays was conducted written by the participants. Bearing in mind the subjective nature of coherence, four different measures were employed to gauge coherence analysis. These measures comprised (i) the IELTS writing rubric (2013), (ii) the Holistic Coherence Scale of Bamberg (1984) for holistic

marking of coherence, together with a modified version of Bamberg (1984) by Connor and Lauer (1985) for sub-component analysis of Holistic Coherence Scale, (iii) the Topical Structure Analysis based on Lautamatti (1978), and (iv) Topic Based Analysis as formulated by Watson Todd (2004; 2016), Correlation and regression analyses were conducted in order to identify relationships between the language skills measures and the four measures of coherence.

The findings indicated that overall morphological awareness, vocabulary knowledge and grammatical competence showed higher associations with the coherence measures than with phonological and orthographic awareness. Whereas the IELTS measure and the Holistic Coherence Scale showed medium-sized correlations with morphological awareness, vocabulary knowledge and grammatical competence, the scores on the Topical Structure Analysis and Topic Based Analysis produced generally smaller correlations.

The study also looked for correlations between the measures of coherence. Somewhat consistent with the previous findings, the IELTS measure produced a relatively large correlation with the Holistic Coherence Scale, whereas all other correlations between measures were between .30 and .49 (i.e., medium sized). Regression analyses also suggested that morphological awareness and vocabulary knowledge were associated with coherence, but the level of prediction provided was not very high. Therefore, on the bases of these findings, it can be argued that those language skills closely associated with semantics would be more likely to be associated with measures of coherence. That said, the variation between the measures of coherence warrants further consideration and investigation.

8.3 Discussion of the findings

8.3.1 Four measures of coherence

Coherence is a multidimensional phenomenon which can be looked at from a text (writer) perspective as well as from a reader's point of view. It is consistently described as a subjective and fuzzy concept, and this sense of the abstract or intangible makes objective analysis of coherence difficult (Lee, 1998). Due to this non-concrete aspect, a single text may be interpreted differently by different people (Knoch, 2007). In addition to this subjectivity and imprecision, theories also differ in terms of viewing coherence as text-based or reader-based. Text-based coherence is viewed as the ability of a writer to embed text-based features in the text and thereby make it coherent. According to a Text-based coherence approach, the onus is solely upon the writer to produce a well-coherent text. Somewhat differently, a Reader-based coherence approach considers the text as an interaction between the reader and the written text. Since the reader is the consumer of the written text, part of coherence interpretation lies with the reader.

In light of the varying views about coherence, it was decided that in this study more than one coherence assessment process would be employed in order to analyse the study participants' essays. The rationale was that this multiple-measure approach (as opposed to any single measure) would better facilitate the study's main objective, i.e. to determine whether findings with one assessment could be replicated with another. The similarities in findings across measures should better inform theories about coherence in written texts, which would be used for teaching and learning of coherence.

The measures included in the study were chosen considering their validity, reliability, theoretical background, and the range of past studies that have deployed

them. Two of the measures, the Holistic Coherence Scale developed by Bamberg (1984), and the Topical Structure Analysis by Lautamatti (1978), have a longstanding history in the field, whereas the third measure, the Topic Based Analysis of Watson Todd (2004; 2016) is a relatively recent assessment process. The fourth process utilised was the IELTS measure. While this has a longstanding history, it has, over the years, evolved and been substantially modified. This is due not only to IELTS being recognised universally as an English assessment tool, but also to meet a modern and wide spectrum of learners. Taken together, these measures provided both a broad and modern basis upon which to judge and evaluate different views of coherence, ranging as they do from those with a long history that have influenced views about coherence, as well as more modern perspectives.

8.3.2 Language skills measures

Correlation analysis revealed the highest level of correlation between morphological awareness and grammatical competence. This correlation may be due to the fact that morphological awareness not only helps in the understanding of the meaning of new words through prefixes and suffixes (such as ‘beautifully from beautiful’), but also helps learners use the correct grammatical form of a word. For example, it may help the learner to use the correct grammatical form for subject-verb agreement in simple present tense by adding ‘s’ or ‘es’, as in, ‘she likes’ and ‘they like’. Furthermore, previous studies have supported the view that both morphological knowledge and grammatical competence can have a positive impact on learner’s writing. Weissberg (2000) studied the impact of morphological awareness and grammar on adult ESL learners’ writing. The findings supported the view that grammatical

competence and morphological awareness correlated with each other and both skills have also witnessed their association with coherence in the present study.

Morphological awareness enhances learners' understanding about inferring the meaning of words through awareness of affixes (prefix and suffix that are added in base form to make a new word such as miss+lead as mislead or use+less as useless). This understanding, in turn, increases the volume of learners' vocabulary knowledge. This may explain higher levels of correlation between morphological awareness and vocabulary knowledge. Zhang and Koda (2012) found such results in the study conducted in China amongst adult university students. Zhang's (2012) findings concluded that morphological awareness played a significant role in the development of vocabulary knowledge in adult ESL learners. Similarly, Mochizuki and Aizawa (2000) conducted a study to investigate the correlation between students' morphological awareness and their vocabulary size. Mochizuki and Aizawa (2000) findings are consistent with the present study and supports the view that morphological awareness contributes to vocabulary development in adult ESL learners. The correlation of these language skills across the measures of coherence in the present study also support that these skills share some similar features.

On the other hand, the correlation between phonological and orthographic awareness is larger than these two measures' correlations with morphological awareness, vocabulary knowledge and grammatical competence (see table 7.1). This may be due to the sound-letter correspondence, i.e., the way a letter is pronounced helps in learning how to write it. In other words, while teaching orthography, letters are also manifested through sound that facilitate both phonology and orthography. This may be

the reason why these two language skills are more correlated with each other than other language skills.

Such a relation between phonological and orthographic awareness is likely to be larger for native speakers of English because they are exposed to the correspondence of sound and letter at early stages of life (Berninger et al., 2010; McCutchen & Stull, 2015). However, the phonological and orthographic circumstance is different for adult ESL learners. In most of ESL contexts, such as Pakistan where the data belongs to, more emphasis is placed on the teaching of writing skills rather than on speaking. So, learners are exposed less to phonemic sounds which may consequently affect the letter-sound-correspondence. Furthermore, for teaching writing to adult ESL learners, sole emphasis is given to the teaching of grammar and vocabulary (Davis & Mahoney, 2005). Therefore, phonological and orthographic awareness have less correlation in adult ESL learners than native ones.

Among these five potential language predictors of coherence, morphological awareness and vocabulary knowledge showed the largest level of correlation across all measures of coherence. The morpheme is the smallest unit of meaning within a language, and morphological awareness is the “conscious awareness of the morphemic structures of the words and ability to reflect on and manipulate that structure” (Carlisle & Feldman, 1995, p. 195). Therefore, the relationship between morphological awareness and coherence development in adult ESL learners is due to both being related to the processing or production of meaning – and perhaps the awareness of how to process or produce meaning from different units of meaning: affixes and roots versus concepts, phrase, sentences and paragraphs.

To the best of researcher's knowledge, there is not a single study that has directly addressed the relationship between morphological awareness and coherence in adult ESL learners' writing. However, there are studies that have addressed the role of morphological awareness in the development of spelling (Berninger et al., 2010; McCutchen et al., 2014), vocabulary knowledge (Mochizuki & Aizawa, 2000), reading comprehension (Saiegh-Haddad et al., 2010) and text generation (McCutchen & Stull, 2015; Northey et al., 2016). All these studies found a positive correlation between morphological awareness and the development of language skills.

Northey et al. (2016) study can be considered as supportive of the present study's findings. The participants were fifth-to-eighth grade students who studied the role of morphological awareness in the development of text generation, as in transcription and organisation of text. Findings indicated that increased knowledge of morphological awareness improved both the organisation and content of the learners' texts and also that both organisation and content are important elements of coherence. One potential relationship here is that morphologically constructed words, such as 'firstly' and 'secondly', may help the writers to organise the development of text from sentence to paragraph, and forward to discourse level. However, further studies are needed to identify the specific and precise relationship between morphological awareness and coherence in writing, particularly amongst adult students using English as an additional language.

Vocabulary knowledge was also found to be a small but potentially significant predictor of aspects of coherence, usually after morphological awareness. Like morphological awareness, vocabulary knowledge also helps the learners produce a meaningful text. Vocabulary knowledge is considered to be helpful for the learners

express a message using a variety of words. Some argue that writing is a craft and that words are tools which writers use to craft meaning (Myers, 2003). Therefore, the correlation between vocabulary knowledge and coherence may be because vocabulary knowledge is related to the meaning of words and coherence is related to the meaning of text.

Though there are several studies that have documented the positive effect of vocabulary knowledge on the development of overall language learning, particularly on writing in native and ESL learners (Graham & Perin, 2007; Olinghouse, 2008), to the best of researcher's knowledge there is not a single study that has addressed vocabulary knowledge as a predictor of coherence in adult ESL learners' writing. Among the studies that have addressed the effect of vocabulary knowledge on writing, Roessingh et al. (2015) studied the effects of diverse vocabulary use on the markers' assessment of essay writing. The findings argued that the students who varied their language, by using synonyms for example, were rated higher than those who used the same lexical item in consecutive sentences. Grabe (1991) also documented that the use of a diversity of vocabulary (different ways of saying the same thing) was predictive of writing quality, and more so than word length. These studies indicate that markers of writing quality consider variety of vocabulary while marking the text.

These findings may also be consistent with the correlation between sequential progression and vocabulary knowledge found in the present study. Sequential progression is based on the idea that new topics semantically related to previous topics in a text will effectively expand it. For sequential progression, writers will have to possess a good range of vocabulary in order to describe the same topic but using new words. It is worth noting that the correlation between sequential progressions and

morphological awareness is similar to that between sequential progressions and vocabulary knowledge and, therefore, there may be alternative explanations for these inter-relations that future research could identify.

Again, considering the overall correlation results, grammatical competence seems to show the next largest relationship with the measures of coherence, after morphological awareness and vocabulary knowledge. Grammatical competence enables learners to use the correct structure of the language, placing the right form of a word in the right position in a sentence in order to convey meaning efficiently. Grammatical competence is the knowledge to produce a well-structured sentence that assists learners to comprehend meaning with ease. Under these assumptions, grammatical competence may be expected to have relationship with coherence as it may help to organise the text. Such organisation of text is an important feature of coherence. The present as well as the past studies such as Ahmed (2019); Garing (2014) and McKenna (1988), found that the organisation of the text bears a high correlation with coherence.

Furthermore, and similar to morphological awareness and vocabulary knowledge, there is a dearth of studies addressing the influence of grammatical competence on coherence in adult ESL learners' writing. However, there are other studies that have addressed the role of grammar in language learning. These studies have yielded mixed results. For example, Andrews et al. (2006) found that teaching grammar to students was ineffective in improving their writing quality. In contrast, Jones et al. (2013) and Myhill et al. (2012) found that the teaching of grammar was effective in improving learners' knowledge about language. The reason for these varying findings on the influence of grammar teaching on learners' language

proficiency, particular in writing, has yet to be fully determined. The present study suggests that grammatical competence has positive, medium-sized correlations with focus and organisation (see table 7.5). These results may suggest that grammatical competence supports the development of focus and the organisation of text, which can then support coherence. Again, further research may support this interpretation or offer alternative explanations.

However, from the results charted in the present study, it is clear that phonological and orthographic awareness exhibited lower-sized correlation across the four measures of coherence than morphological awareness, vocabulary knowledge and grammatical competence. One possible reason might be related to the methods of teaching English in government institutions in Pakistan (where the research was conducted). Most Pakistani government institutions teach English predominantly through a grammar-translation method. This method emphasises the use of the mother tongue to learn the target language (Ahmed, 2019; Shamim, 2008); and such teaching methods are likely to influence L2 writing performance (El-Aswad, 2002). Given that most English teaching takes place in local language, learners have less chance of listening to the target language, a factor which may consequently affect their learning of the sound patterns in the target language, and also their development of phonological awareness in that language. If a skill is not developed, then it would be unlikely to be used in writing production.

In a previous study by Abu-Rabia (2001), it was argued that orthographic knowledge of L1 may hinder the process of L2 orthographic learning. Again, it may be that orthographic awareness of the L2 was not developed enough to support writing coherence in case of the participants in Abu-Rabia's (2001) study. That said, further

research is necessary here too. Based on the current researcher's knowledge, no other study has focused specifically on the role of phonological and orthographic awareness in the development of coherence in adult ESL learners. Therefore, further studies will be needed to help explain such findings. A detailed discussion about the possible options for future research will be discussed in a later section of this chapter.

8.3.3 The language skills measures and sub-component parts of coherence measures

The current research also considered the relationships between the linguistic skills measured in the study (morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence) and the sub-component parts of each measure of coherence. Sub-component parts of the Holistic Coherence Scale showed mainly medium-sized correlations with morphological awareness, vocabulary knowledge and grammatical competence. These were focus, organisation and closure (see table 7.5).

Morpheme is the smallest unit of meaning and morphological awareness is the manipulation of the knowledge of morphemic structure to perceive and produce meaningful portions of language. Also, focus as a sub-component part of Holistic Coherence Scale is related to the use of only and only single topic in the text to give clarity to the text and thereby, make it more meaningful to a reader. On the grounds that both of these skills are related to the meaning of the language, having correlation between them is essential.

As stated in earlier section of this chapter, vocabulary knowledge should support communication of a message. Vocabulary knowledge should also support the

understanding of the hierarchical relationship of words which will help the writer move from general to specific examples and vice versa. For example, while animal is a generic term, elephant is a specific kind of animal, and man and woman are both human beings. Such uses of different but related words will assist the writer to expand the topic while consistently remaining on topic. This is likely to lead to complimentary relationships between vocabulary knowledge and focus.

Organisation of the text also witnessed correlation with morphological awareness and vocabulary knowledge. Organisation of the text refers to the step by step description of the events which makes the text logical and meaningful as compared to any random collection of events which makes no sense to the reader. Morphological awareness helps to make the language structure meaningful. Similarly, vocabulary knowledge develops a sense of using the proper or appropriate word within the proper structure of the text. Simple examples of this would be the use of words that denote the beginning, the middle or the end. For example, 'To begin with', 'After all', and 'Finally'. This may be the reason why organisation, benefiting from the relationship with morphological awareness and vocabulary knowledge, can be conducive to communicating meaning.

Closure is a brief statement written in the last paragraph of an essay often both restating and summarizing the body of the composition, and often concludes by offering a final impression of the writer's opinion about the whole preceding text. The closure or conclusion re-states the whole thesis in miniature and needs proper wording and structure to make the statement precise and meaningfully effective. As morphological awareness and vocabulary knowledge are related to meaning, it may be expected that these skills will assist the writer to choose the correct words to sum up the whole text.

In this study's findings, contrary to focus, organisation and closure, which showed medium size correlations with some of the language skills measures, content, cohesion and grammar error produced mainly small-sized correlations with the same language measures.

Although cohesion showed a large correlation with the overall coherence measure in Holistic Coherence Scale (see table 7.7), it also produced small sized correlations with morphological awareness and grammatical competence, as well as a correlation with vocabulary knowledge just within the medium range of correlation sizes (see table 7.5). Some previous studies have documented that the combination of cohesion and coherence makes a text more meaningful (Candelo et al., 2018). However, other studies, such as those by Crossley et al. (2016) suggest that a text can be coherent without being cohesive. Such studies suggest that lexical cohesion is more related to coherence than other kinds of cohesive devices, such as pronoun and conjunction (Khalil, 1989). This may be consistent with the current study given that cohesion shows a larger correlation with vocabulary knowledge than with morphological awareness and grammatical competence. The possible reason for higher correlation of lexical cohesion with vocabulary knowledge than the correlation of morphological awareness and grammatical competence might be because lexical cohesion is more text-based which means it requires contextual clues for interpretation since different words may have different meaning in the text, whereas grammatical cohesion, with the use of pronouns and conjunctions, is text-free and can be interpreted without the help of text.

As a measure of coherence, Topical Structure Analysis exhibited higher relationships with morphological awareness, vocabulary knowledge and grammatical competence than phonological and orthographic awareness (see table 7.4). However,

its sub-components, sequential progression and unrelated progression produced larger correlations with morphological awareness and vocabulary knowledge, whereas parallel progression showed larger correlations with phonological and orthographic awareness. That said, the vast majority of these correlations were small (the largest being .31 between vocabulary and unrelated progression) with many being insignificant. On the basis of these findings, it is possible to suggest that the language skills assessed in the current study do not substantially support the production of these types of progressions. Moreover, the higher association of sequential progression and unrelated progression with morphological awareness and vocabulary knowledge indicates that these two progressions are more related to meaning, whereas the higher association of parallel progressions with cohesion and organisation, suggests that parallel progression is more related to the connectivity and structure of the text than to meaning. A simple explanation for zero correlation of total number of progressions with language skills measures may indicate that the kinds of progressions used in a text may play a bigger role in making coherence in the text than the total number of progressions.

8.4 Measures of Coherence

Besides considering relationships between the measures of coherence and language skills, investigation of the mutual relationships between the four measures of coherence was also considered prudent and necessary in order to determine whether they were measuring a common construct. As stated in chapter two, coherence can be considered a subjective concept, though achieving reasonable agreement should be possible (Van Dijk, 1977). In line with such expectations, the correlations between the four measures of coherence showed variations in the level of correlation among the measures, but with a reasonable degree of agreement (see table 7.3). Most correlations

were of medium size, except for the large correlation between the IELTS and Holistic Coherence Scale scores. This large correlation between the IELTS measure and Holistic Coherence Scale suggests that these measures share some common elements of coherence. To begin with, both measures are relatively subjective when compared to the other two measures. Marking of the IELTS measure and the Holistic Coherence Scale depends mainly on the assessor's interpretation of the text and their understanding of the pre-requisite descriptors to be used in order to provide a coherence score.

In addition, both measures could also be described as having similar sub-components used in the analysis of coherence. For example, cohesion is an important sub-component part in both of the measures. Cohesive devices are used not only to link together the surface grammatical ideas, but also to help in the understanding of the overall discourse meaning (Halliday & Hasan, 2014). Halliday and Hasan (1976) introduced five kinds of cohesion: lexical cohesion, reference, conjunction, ellipsis and substitution. Although cohesion is part of both measures for coherence analysis, the Holistic Coherence Scale included detailed description of five kinds of cohesive devices. This is in contrast to the IELTS assessment which simply affirms or requires the linking of the text but without specifically identifying the necessary individual cohesive devices. This deficit of specific devices in the IELTS system points to a lack of logical analysis in the IELTS measurement of cohesion. For example, for band 8, the descriptor says, 'manages all aspects of cohesion well' whereas for band 9, the descriptor states, 'uses cohesion in such a way that it attracts no attention'. Both statements are arguably obscure and ambiguous and may confuse the markers. In contrast to the IELTS measure, the Holistic Coherence Scale specifies a logical progression in the descriptors for cohesion analysis. Nevertheless, commonality in the

importance of assessing cohesion may be one reason for the large correlation between the two measures.

Organisation of the text is also a feature common to both the IELTS and Holistic Coherence Scale measures. Organisation refers to the ‘structure of the text’, ideally providing a proper beginning, middle and end, as well as a writer’s introduction of a topic and supporting details throughout the text (Ahmad et al., 2019). Being familiar with this structure should lead the reader to comprehend the text more easily. Organisation, therefore, for both the IELTS and the Holistic Coherence Scale measures, is important for coherence development in the text. However, as with the assessment of cohesion, the IELTS measure is somewhat ambiguous about the marking of organisation. Up to band 8, the descriptors refer to the assessment of organisation logically. But, notably, band 9 does not provide any descriptor specifically defining organisation, a deficit which may confuse the marker while marking the essays for coherence.

Moreover, topical development seems to be another similar construct in both measures. Topical development refers to the addition of new but related topics, usually carried out by the inclusion of new information in each sentence. This way a text shows a continuous development in the progression of ideas (Chen, 2019). Although both measures weight text for logical progression, neither measure explains clearly what the topic is or how to trace it out in the text. Topical Structure Analysis does the best in this regard because it explains not only topic, but also different kinds of topical development. Holistic Coherence Scale, however, more so than the IELTS measure, shows more clearly the requisite developmental stages of progression on the marking scale, ranging from: 1: ‘no progression and frequent digression of topic’, to 4: ‘clear

identification of topic and no digression'. In contrast, the IELTS measure starts from band 3 with 'illogical ideas', and band 4 with 'lack of clear progression', up to band 8, as 'clear logical progression'.

Despite having some commonalities, both systems differ in certain aspects for measuring coherence analysis. For instance, the Holistic Coherence Scale includes context, focus, closure and grammar error as part of the analysis of coherence. Focus and context have been found to have a high level of correlation with the overall measure of coherence in the Holistic Coherence Scale. Previous studies, such as Connor and Lauer (1985) and Garing (2014), have also argued that focus and context play an important part in the coherence of a written text. In the IELTS system, the absence of any measurement or consideration of these two elements of coherence may help explain the size of the correlation between the measures of coherence in the present study.

However, Holistic Coherence Scale has specific indicators of grammatical as well as mechanical errors which interrupt meaning and the reading process. In the present study grammatical error as a sub-component part of Holistic Coherence Scale was analysed. In the IELTS measure grammatical error is treated separately and not considered as part of coherence which collaborates with the definition of coherence in the present study as having the semantic unity. The study's findings support the idea that coherence breaks or interruption in meaning correlates with coherence as unrelated progression, and show that the Holistic Coherence Scale witnessed moderate correlation size with coherence.

However, findings show that the difference between being text- or reader-based is not 'complete' in itself. It is a matter of degree rather than entirety. Virtually all measures of coherence have both kinds of features but differ in terms of degree

(Spencer & Fitzgerald, 1993). The text- or reader-based approach may be the reason to have different level of correlation of coherence measures with cognitive linguistic skills.

The reader-based measures are based on the idea that a reader is the actual consumer of the text engaged in an interactive process between the reader and the text. The reader constructs meaning from the text with the help of previous knowledge (Fleckenstein, 1992). Therefore, assessment of coherence mainly depends upon the interpretation of the reader in the reader-centred approach. In reader-based measures, an assessor looks at the written sample as a whole entity and rates the text by considering the presence of constructs in it such as focus, context, organisation and structure without locating or quantifying them. In addition, some non-linguistic items (such as a reader's previous knowledge and typically termed as 'schema') also contribute to analysis. The more familiar the reader is with the topic, the more likely they are to comprehend the text with ease. Thus, reader-based measures mainly depend on the reader's interpretation of the text, rather than the text itself.

In contrast, text-based analysis mainly focuses on a writers' techniques and considers the text as an independent body which already has inscribed meaning and which can be interpreted through the systematic analysis of the text. According to this approach, non-linguistic features such as 'schema' are not necessary to interpret the coherence. In the text-based analysis, the assessor identifies certain features objectively by following systematically developed criteria. These include: identifying topics, different kinds of progression in Topical Structure Analysis such as finding and linking concepts through moves, quantifying such moves per t-unit in case of Topic Based

Analysis and then either counting or combining these elements in order to arrive at a score for coherence.

Spencer and Fitzgerald (1993) investigated whether reader-based or text-based measures assess the same features in a piece of text for coherence. Stories written by sixth grade students were analysed using a modified form of Bamberg (1984) measure to assess reader-based coherence and Hasan (1984) Cohesive Harmony Index, which can be used to assess text-based coherence. The Cohesive Harmony Index analyses local and global coherence by locating cohesive ties, such as pronoun, synonyms and conjunctions, identifying interaction among these ties and counting the total number of tokens (individual occurrences of a linguistic unit in speech or writing) in chain interaction. This token count was contrasted with type which is an abstract category, class, or category of linguistic item or unit. The study produced a low level of correlation between text and reader-based measures. Although this is consistent with the current argument – that text-based and reader-based measures will not assess the same aspects of a text – the present study found medium- to small-sized correlations between text-based and reader-based measures of coherence, and most of these were larger than those found by Spencer and Fitzgerald (1993). This may be due to the differences in the age of participants in the two studies. Whereas Spencer and Fitzgerald examined the writing of sixth grade students, the present study examined adult ESL learners. It is worth noting that Spencer and Fitzgerald (1993) have documented that coherence is a developmental phenomenon and can improve with educational grade. This developmental phenomenon may help explain why the adult ESL learners examined in the present study wrote more coherent essays, and used more linking terms and statements, than the younger participants examined in Spencer and Fitzgerald (1993) study. Another factor to consider is the use of stories by Spencer and Fitzgerald

(1993), and the use of essays in the present study. It was considered that a story would be likely to be written in narrative form, whereas an essay would more likely be descriptive, a form that would influence the choice of vocabulary and structure, and the way information is linked across the text.

In addition to this essay versus story format, it is relevant to note the different measures used. Spencer and Fitzgerald used a modified form of Bamberg's (1984) Holistic Coherence measure, whereas the present study used actual measure – hence, the scores produced via this scale across the two studies may not be the same. Moreover, as Spencer and Fitzgerald (1993) recognised themselves, Hasan's (1984) Cohesive Harmony Index mainly focuses on surface links, or cohesion, which is just one aspect of coherence. In contrast, the present study employed both the Topical Structure Analysis and the Topic Based Analysis measures to assess text-based coherence which, notably, use more than just cohesion in their analysis of coherence.

8.5 Coherence measures with their sub-component parts

The correlation analysis in the present study was conducted to investigate relationships between the sub-component parts of the coherence measures. The purpose was to look for potential sub-components that may contribute to the assessment of coherence in each measure. The rationale was that such commonalities across measures, and relationships between sub-components, may inform our understanding of how to assess coherence in adult ESL learners' writing. The IELTS measure uses graded descriptors as part of its assessment, which makes the identification of sub-components difficult. Therefore, this measure will not be included in the following discussion.

The findings of Holistic Coherence Scale with its sub-component parts are relevant to the theoretical concept of coherence. Focus, one main topic in the text and no digression from the main topic, shows high level of correlation with coherence affirming that well-coherent essays are well-focused and discuss only one main topic (Ahmed, 2019). McKenna (1988), Connor and Lauer (1985), and Garing (2014) also found large correlations between focus and coherence in their respective studies of adult learners. These results not only support the findings of the present study but also persuade that the inclusion of irrelevant topics may confuse the reader. This conclusion is corroborated by the negative correlation between unrelated progression and the overall coherence score produced by the Topical Structure Analysis measure and reinforces the idea that more divergence from the topic means less coherent text. A focus on one topic locally (sentence level) as well as globally (text level) is an important element in the development of coherence in adult ESL learners' writing. Note that scores for focus and unrelated progressions were also correlated in the results, consistent with the idea that these are assessing a similar underlying feature of coherence.

However, sometimes the concept of focus is misunderstood by the learner. One way that is generally used to create unity of topic by inexperienced or novice writers is to mention the topic in each consecutive sentence. However, this method can sometimes hinder the development of topic which, in itself, is an important aspect of coherence (Brostoff, 1981; Chen, 2019). This problem has been specifically shown with Pakistani ESL learners (Fareed et al., 2016). The small correlation between parallel progression and the Topical Structure Analysis measure of coherence in the present study supports this view since in parallel progressions the same topic is used repeatedly with the intent to define the topic. This allows the writer to provide basic information about the topic,

but it also restricts the ability to add new but semantically relevant topics by way of sequential progression and, therefore, can restrict the quality/interest of the text. In contrast, sequential progression showed large correlations with coherence, as found in Topical Structure Analysis measure. This finding is supported by the previous studies with adult ESL learners which found that high-rated essays contained more use of sequential progressions (Barabas & Jumao-as, 2009; Burneikaite & Zabiliute, 2003; Fareed et al., 2016; Ghazanfari et al., 2011; Liangprayoon et al., 2013).

However, some of the studies, such as Witte (1983), found more use of parallel progression by native speakers of English. In parallel progression the same lexical item, pronoun or synonym, is used to continue same topic thereby demonstrating its importance as the main topic in the text. In this way a writer continues to add relevant information about the same topic without diverging from it. This might be because the writer tends to focus on the main topic and does not want to expand beyond the topic, or it might be because native speakers have a broader command of vocabulary and can, therefore, use various synonyms to continue discussing the main topic. In contrast, ESL learners may feel more at ease to make a chain of connection in the text through 'theme-rheme' adjacency in successive sentences.

Culture thought patterns of language may also be a contributing factor. As Kaplan (1966) states, culture shapes language thought patterns. Therefore, different languages may have different thought patterns. Simpson (2000) did contrastive analysis (analysis between different languages) to investigate the use of progression in different languages (English and Spanish) and found that the writers of both languages used almost the same amount of progressions and also that they used more parallel progression s than sequential. However, Dumanig et al. (2009) study found that native

and non-native professional editorial journal writers of English used progression differently. American native editorial writers used more parallel progressions than Filipino professional editorial writers who used an almost equal amount of parallel and sequential progressions. It is important to recognise that these studies in which relatively small numbers of participants were studies, delivered mixed findings making it difficult to generalise about their overall results. Therefore, subsequent studies employing more numerous participants and addressing cultural differences in the use of progression will further clarify the issue.

Similarly, the organisation which is a sub-component of the Holistic Coherence Scale exhibited a large correlation with the overall coherence measure. This was an expected result for the researcher because a well-organised essay will show proper structure or form, which assists the reader to follow the writer's view systematically and thereby reach a clear conclusion (Van Dijk, 1977; Wulff et al., 2012). The reader gets assistance from a conventional organisation of essays, which can be used to support the building of a schema to represent the meaning of the text. Schema is the reader's mental picture that is created while reading and is based on his/her past experience; for example, the experience of having dinner at a restaurant. This stimulation of a past experience should allow the reader to predict events in the text and understand objects in the situation described, and a well-organised essay fulfils the reader's expectations about the event/situation, which should lead to better comprehension (Emig, 1982). Similar conclusions have been expressed by Fareed et al. (2016) and Connor and Lauer (1985).

Language is context specific (Bereiter & Scardamalia, 2013; Kim & Crossley, 2018; Witte & Faigley, 1981). For example, the context or circumstances of a statement

or idea will clarify the meaning of a word, such as ‘bank’ as ‘the edge of a river’, or as ‘a place where money is deposited and withdrawn’. The adjacent words or sentences provide a clear context for the statement. Moreover, specific contexts may require specific vocabulary, such as scientific or academic vocabulary, as well as formal and informal words. Therefore, the correlation of context with coherence in Holistic Coherence Scale is quite comprehensible because context helps to comprehend the intended meaning of a word (Bamberg, 1984). Previous studies in which the same measure to analyse context as was used in the present study also found large-size correlations between measures of context and coherence (Connor & Lauer, 1985; Garing, 2014).

Closure is a sub-component of Holistic Coherence Scale which focuses on the final statement in the essay, and is important since it reiterates the writer’s most important thought about the topic (Rustipa, 2016). Findings from McKenna (1988) and Connor and Lauer (1985) also indicated that closure produced large correlations with the overall assessment of coherence in the Holistic Coherence Scale, similar to the present study. However, closure shows a zero correlation with extended parallel progression which was an unexpected result because extended parallel progression also works as a closing statement in the Topical Structure Analysis measure and in the Holistic Coherence Scale. The plausible reason for the unexpected result may be that the closure is normally used only once in a text whereas extended parallel progression may occur several times but is not used as a closing statement. Extended parallel progression is also used to remind the reader of a main topic after a few progressions. Therefore, there is a difference in the level of occurrence between these two constructs and this may account for the lack of correlation between them. However, the finding

that they are in fact measuring very different aspects across the two coherence assessment measures warrants further investigation.

Alice et al., (2019) viewed the mixture of coherence and cohesion to be very helpful for interpretation of the message and stated that it creates linguistic sense in the text. For a long time, cohesion has been considered as almost synonymous with coherence. However, several studies have supported the view that cohesion is only one part of coherence (Johnson, 1992). Furthermore, previous studies have varied in their conclusions about the importance of cohesive ties for coherence. Some studies have argued that cohesion is helpful for the reader to link ideas together (Kuo, 1995). Other studies have found that skilled readers can comprehend links without cohesive ties and that these are helpful only for unskilled readers (Crossley & McNamara, 2010; Watson Todd et al., 2007). However, previous studies that have used the Holistic Coherence Scale to determine relationships between coherence and cohesion (Connor & Lauer, 1985; Garing, 2014; McKenna, 1988), have been consistent with the findings of the present study. These studies found large correlations between coherence and cohesion, supporting the assertion that cohesion is an important part of coherence, as the present correlational data also suggests. Moreover, the negative correlation of cohesion with unrelated progression further supports this view as unrelated progression contains a topic that has connection with neither preceding or successive sentences and, therefore, shows a break in coherence whereas cohesive ties support coherent links through lexical cohesion (using the same noun) or grammatical ones. Thus, the negative correlation between these sub-component parts further supports cohesion to be part of the coherent text.

Unlike all other sub-component parts of the Holistic Coherence Scale, grammar shows a low correlation with the overall coherence measure. Previous studies' findings vary in terms of the relationship of grammar with coherence development in adult ESL learners. McKenna (1988) found grammar had the lowest correlation with Holistic Coherence Scale, identified as .46, whereas Connor and Lauer (1985) found that grammar had a high correlation with Holistic Coherence Scale, identified as .71. The present study found the lowest correlation of grammar with Holistic Coherence Scale, identified as .19. The possible explanation for the difference between the above studies may be the way the raters considered and marked grammatical errors. For instance, in the present study, the raters considered all grammatical errors of tenses, subject-verb agreements and the misuse of apostrophes. Other studies may have marked grammar in a different way. Due to variation in findings, further research is needed to find out the association of grammar with coherence in adult ESL learners' writing.

The correlations between Topical Structure Analysis and its sub-component parts suggest that sequential progression is the sub-component contributes most to the overall assessment of coherence in the adult ESL learners' writings. Clearly, the logical development of ideas in an essay is a very important aspect of coherent writing. It broadens the discussion on the topic while maintaining the coherence of the text. Sequential progression is used by the writers to expand the text and provides more related information about the topic rather than sticking to the same topic. However, previous studies have not always identified such large correlations. Ghazanfari et al. (2011), for example, worked with undergraduate EFL learners in Iran and found that high-rated essays produced more sequential progressions, followed by parallel and extended parallel progressions. Liangprayoon et al. (2013) conducted a study with adult 3rd year ESL university students in Thailand and found similar results to that of

Ghazanfari et al. (2011) in terms of the order of number of progressions identified in good essays. Schneider and Connor (1990) also found that good quality essays produced a markedly higher number of sequential progressions than medium- or low-rated essays. In contrast, Almaden (2006) studied paragraphs written by English native speakers and Filipino non-native speakers of English and found that high-rated essays written by both groups contained more parallel and extended parallel progressions than sequential progressions. Similar results (i.e., more parallel than sequential progressions) were found by Simpson (2000) in 40 paragraphs of articles published in academic journals.

Despite these differences, the previous studies maintain that the over-use of parallel progression will not allow the text to expand and may be the result of the learners' misleading idea about unity that is devoid of development of ideas (Attelisi, 2012) and this has been argued to be a feature of less-skilled or novice writers (Burneikaite & Zabaliute, 2003). Alternatively, unnecessary use of sequential progression may distract the reader's attention from the main topic. Therefore, a proportionate use of each kind of progression is necessary to produce a well-coherent and balanced text.

Topical Structure Analysis was also negatively related to unrelated progression: a sub-component part of Topical Structure Analysis measure. This medium-sized negative correlation suggests that any topic that is not related to the main topic distracts a reader's attention from the main idea and thus disrupts coherence. Although Knoch (2007) used unrelated progressions as part of Topical Structure Analysis in his study as a descriptor for overall marking criteria, its correlation was not carried out with the coherence marks. Therefore, to the researcher's knowledge, there is not a single study

that has addressed the correlation between unrelated progressions and coherence in Topical Structure Analysis. However, its correlation with focus, organisation and cohesion may be used as an evidence to support its contribution in coherent texts in adult ESL learners' writing.

The Topic Based Analysis uses the total number of t-units and total number of moves per t-unit as constituent parts of its assessment of coherence. The correlations between these two sub-components and the overall coherence score of the Topic Based Analysis were around .3 (a small medium-sized correlation). It is considered that less number of moves per t-unit indicates a higher level of coherence in the text because frequent moves from one topic to another may confuse the reader necessitating high memory to remember more topics. Therefore, it is not surprising to find these related to more coherent text. However, the size of the relationship is again quite small and suggests that there is a great deal more to the assessment of coherence than the use of these assessments of t-units and moves per t-unit.

8.6 Regression analysis

In the present study, regression analyses were performed to identify the amount of variability in the coherence measures explained by the five language skills measures. Standard multiple regression and stepwise multiple regression procedures were used. Although these findings confirmed the already identified associations between morphological awareness, vocabulary knowledge and grammatical competence with coherence, the level of variability explained in the coherence measures was not very high.

The findings, however, raise a serious question. If coherence is meaning-based, and if meaning-related language skills such as morphological awareness, vocabulary knowledge and grammatical competence do not contribute much in coherent writing, then what else contributes in the coherent text in adult ESL learners' writing? The possible options for future investigation about coherence is discussed in section 8.8 Limitations and Suggestions for Future Study, immediately after the following section.

8.7 Implications

The language skills tested in this study as predictors of coherence (i.e., morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence) have been documented in the literature as predictors of certain aspects of writing such as spelling, syntactic maturity, organisation of the text, and length of the text, (Berninger et al., 2010; Garcia et al., 2010; McCutchen & Stull, 2015; Northey et al., 2016). These studies found that learners with good knowledge of these language skills produced more correct spelling and wrote more correct sentence structures than learners with less knowledge of these language skills. These language skills also helped learners to produce lengthier texts, being more confident about the use of language. Furthermore, being competent in these language skills enabled learners to think of other aspects of writing, such as planning and organising the text.

Morphological awareness and vocabulary knowledge showed higher relationships with adult ESL learners' writing coherence than the other language skills in the study. This finding may be consistent with previous findings from Masilamani (2019) and Shamsuzzaman (2015), both of whom found vocabulary knowledge and morphological awareness as predictors of measures of writing performance in adult ESL learners. Similar to the present study, Masilamani (2019) and Shamsuzzaman

(2015) found grammar knowledge to produce smaller correlations with their measures of writing performance than both morphological awareness and vocabulary knowledge. Wilkins (1972) has argued that “without grammar very little can be conveyed, without vocabulary nothing can be conveyed” (p. 111).

In this study, however, phonological and orthographic awareness showed little relationship with coherent text development in the adult ESL participants. Phonological and orthographic awareness has been found to explain variability in word level skills, such as spelling and pseudo-word recognition (Sadeghi et al., 2014), particularly in young children. Therefore, it may be assumed that these two language skills can contribute to certain aspects of writing (maybe basic word production), but do not support overall coherence of the text being produced. Clearly, these two general areas of writing production (word production and text coherence) are inter-related. (Berninger, et al., 2002) theorised in their ‘Simple View of Writing’ that the automaticity (the production of language skills without much effort) in transcription skills (spelling and letter writing) free the working memory to focus on higher order skills of writing such as text generation whereas the lack in transcription skills may lead to a deficit of text generation. Therefore, further studies will be required to investigate how these differing skills interact across different groups of writers, including those with different levels of abilities in these two general areas of writing performance.

In addition to theoretical implications, this study should also inform practice: one of the purposes of the study was to make coherence as concrete and objective as possible in order to support the teaching and learning of coherence in the classroom. Therefore, based on the findings of the present study, some pedagogical suggestions are made to improve the teaching of coherence for adult ESL learners. Although the

data were collected in Pakistan, the suggestions may be appropriate for other ESL contexts.

The teaching of sub-component parts of the Holistic Coherence Scale: focus, context, organisation, cohesion and closure, might raise learner's awareness about coherence, and lead them to combine these features in a more informed and aware manner in their text production. Grammar teaching can also be helpful for the general understanding of language. On the other hand, the teaching of sub-component parts of Topical Structure Analysis: parallel progression, sequential progression, extended parallel progression and unrelated progression, may help learners to develop and expand text coherence. Combining the teaching of both sets of sub-components may help to develop a concrete and a comparatively clearer concept of coherence for the learners. Furthermore, it could be argued that Topic Based Analysis is basically a measure for researchers and language teachers and thus can be used to analyse text in order to further scrutinise the level of coherence in learners' writing.

Overall, the findings in this study suggest a relationship between morphological awareness and vocabulary knowledge across the four measure of coherence. These findings suggest that good vocabulary knowledge and morphological awareness may assist learners to produce coherent written texts. It may, therefore, be useful if instructors support the development of vocabulary knowledge and morphological awareness via activities that students can perform to improve these language skills and thereby recognise the benefits of such improved language skills. However, given that these language skills show small- to medium-sized relationships with coherence, additional skills may need to be pursued by tutors in order to help improve a learner's ability to produce coherent texts.

8.8 Limitations and Suggestions for Future Study

Like any other piece of research, the present study has limitations which must be considered in order to better understand the outcome of the study. These limitations can also help develop future research to further refine second language theories and practices related to writing. One obvious limitation is in terms of the population that was the focus of the study. The data were collected in different universities of Punjab, the biggest province of Pakistan in terms of population. The province also has the highest level of literacy rates, both for boys and girls, in Pakistan. Other provinces of Pakistan were not included due to time and access constraints. Therefore, future studies might consider including samples from other regions of Pakistan. As the country has diverse cultures and languages, slightly different findings from the present study may be anticipated. In previous studies on coherence, effects of culture on the development of coherent text have been recognised (Almaden, 2006; Simpson, 2000). These studies found a difference in the use of different progression levels by native and adult ESL learners. For instance, according to (Almaden, 2006), native speakers used more parallel progressions than sequential progressions, which suggests that the writings of USA native speakers is more compact than Filipino writers who use more sequential progressions and thereby indicates that their writing is more elaborative. Such studies suggest that culture may affect the use of language structure which may, in turn, influence coherence. Therefore, if future studies are conducted in different countries with ESL/EFL adult learners including Pakistan, it may well prove useful to contrast these with the findings reported in the current study. It could provide not only a broader canvas regarding the predictors of coherence, but also inform the relationship of sub-component parts with coherence.

The present study used a product-centered approach in order to identify the predictors of coherence in adult ESL learners' writing. Taking this approach, a final draft written by learners was used for assessment purposes, either to mark the written script for class evaluation tests, or for research purposes. The purpose of the study was to investigate the morphological, phonological and orthographic awareness, vocabulary knowledge and grammatical competence as predictors of coherence. Accordingly, students' final drafts were assessed for coherence analysis to correlate with language skills measures. Future studies could use a process-centred approach to find out the effects of different stages of writing in relation to the development of coherence in the written text. The process-centred approach lays stress on the process of writing rather than the outcome (final draft in case of product-centred approach). These processes include planning, drafting and revision (Flower & Hayes, 1981b). A study could be performed to investigate the role of each process stage in the development of coherent text in adult native and ESL learners. This form of exploration could further help our understanding of which process contributes more in the development of coherent text.

The present study is limited in terms of using only descriptive essays in the study for investigating predictors of coherence. In descriptive essays a writer is asked to describe an event, experience, emotions or a person. Previous studies, such as that of Ghazanfari et al. (2011), have documented the effects of different genre on coherence analysis, pointing out that different genres of writing employ different structures. Ghazanfari et al. (2011) found that in both comparison and contrast paragraphs, writers used more sequential progressions, whereas in chronological paragraphs, writers used more sequential progressions. In order to compare and contrast things, a writer needs to use different words which, in turn, entail the inclusion of new topics via sequential progression. This contrasts with the use of chronological order where a writer lists

events which, in effect, repeat the same event and is accomplished by the use of parallel progressions. Similarly, in a descriptive essay a writer requires more nouns and adjectives to describe anything which is different from an 'argument' or hypothesis essay which requires the writer to set an argument and counter argument. In addition to finding the differences in the use of progressions, future studies could also investigate levels of coherence by using Holistic coherence Scale by Bamberg (1984) and may also yield different but interesting results. For instance, a descriptive essay may need a lesser number of closures (a sub-component of Holistic Coherence Scale) because description of an event may not necessarily need to close every event of description. However, an argumentative essay may need more use of closure since every argument may need a closure to reiterate the conclusion of each argument.

In the present study, in which general vocabulary test were administered, vocabulary knowledge measures showed the highest level of correlation with coherence. Subsequent studies might also meaningfully use depth and width of vocabulary measures separately to explore the effects of both on the development of coherence in a text. Depth of vocabulary refers to the use of a word in different contexts or a learner's knowledge of various aspects of a given word, or to gauge how well a learner knows that word, whereas breadth of vocabulary concerns the number of words a learner knows. These two different dimensions of vocabulary may be investigated as predictors of coherence. It would greatly help in the understanding of coherence as to whether the in-depth understanding of a word is more associated with coherence, or with the quantity of words.

Topical Structure Analysis has been employed in the teaching and revision of coherent text and has been found to be instrumental in helping learners improve

coherency in their writing (Attelisi, 2012; Fan & Hsu, 2008; Liangprayoon et al., 2013; Shabana, 2018). However, to the best of researcher's knowledge, Holistic Coherence Scale has not been employed for the teaching of coherence, even though it has been used for coherence assessment widely. The teaching of sub-component parts such as focus, organisation, context, closure, cohesion and grammar will give learners a sense of coherency in the text and they will be able to produce a well-coherent text. Moreover, the teaching of these skills may well enhance learners' comprehension of the written text in general, and of coherence in particular.

Last but not the least, gender has been documented to have effects on language learning. Female learners have been found to be better language learners than males (Furtina et al., 2016; Saeed et al., 2011). Future studies could address the effect of gender differences in written coherent text in adult ESL learners' writing and also the reason behind it. For instance, both genders differ in employing strategies to write a coherent text.

8.9 Conclusion

Writing is a craft that a learner achieves through learning and continuous efforts. The process of writing requires social, cognitive and linguistic skills in order to produce a coherent piece of text. The importance of coherent writing in the academic career of ESL learners cannot be under-estimated and can best be appreciated when it is recognised that it is often through good written outputs that a student achieves good grades which will lead to a qualification and which, in turn, will enhance the opportunity to achieve success in their working life. Bearing this importance in mind, the present study investigated the role of certain language skills (i.e., morphological,

phonological and orthographic awareness, vocabulary knowledge and grammatical competence) and how these may influence coherence in adult ESL learners' writing.

The findings in the present study suggest that morphological awareness, vocabulary knowledge and grammatical competence are related to the assessments of coherence across the four measures used in the study. Phonological and orthographic awareness, however, did not reveal a relationship with coherence in the adult ESL learners' writing. Although results of regression analysis confirmed these associations with coherent text, the level of variability revealed in coherence was not very high. Therefore, further underlying skills may need to be considered when developing models to explore what individual abilities support an aptitude for coherent writing and practices for improving coherence in writing in ESL students.

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Appendix A

Dear Mr. Saeed,

Thank you for showing interest in the data collected from University students in Pakistan in 2014. I, hereby give you my consent to use &/analyze the data for your doctoral study and for future research publications. I, however, would like to make it clear that the data formed part of a longitudinal study titled "Literacy Learning in English as a Second Language or Multilingual children" being carried out at the department of Education, University of Canterbury, New Zealand under the leadership of Dr Amir Sadeghi and Dr John Evertt . I do hope that you will give due credit as and when you publish.

All the best for your study.

Kind regards,



Dr Athar Munir Siddiqui.

Assistant Professor

Higher Education Department,

Government of the Punjab, Pakistan

Email: huny_taurus@yahoo.com

Cell: +923006894401

Appendix B

Abdul Saeed

From: Amir Sadeghi
Sent: Tuesday, 14 February 2017 7:34 p.m.
To: Abdul Saeed
Cc: John Everatt; Brigid McNeill
Subject: Re: Ethical Approval

Hello Saeed
That is really good.
Hence save Athar's letter and treat this email as my consent too.
Look forward to read through your analysis.

Kind regards
Amir Sadeghi

On 14/02/2017, at 9:39 AM, Abdul Saeed <abdul.saeed@pg.canterbury.ac.nz> wrote:

Hi John,

As you have already received an email from Ethic Committee that I need not to get ethical approval as I will be using secondary data plus I have permission from the organisation.

Regards,

Saeed

Appendix C

Abdul Saeed

From: Human Ethics
Sent: Tuesday, 14 February 2017 4:13 p.m.
To: Abdul Saeed
Cc: John Everatt; Amir Sadeghi; Brigid McNeill
Subject: RE: Application for Ethical Approval

Dear Abdul,

Just to confirm, as discussed earlier, you do not need to submit an ethics application if you will be using secondary anonymised data and have the permission of the organisation to use the data, as you have indicated.

Kind Regards,

Rebecca Robinson

Ethics Coordinator and Erskine Programme Administrator
Level 5 South, Matariki Building
University of Canterbury ~ Te Whare Wānanga o Waitaha
Private Bag 4800, Christchurch 8140, New Zealand
Ph: +64 3 369 4588, Ext: 94588
Email: human-ethics@canterbury.ac.nz
Ethics hours of work: Mon 2.30-5pm, Tues 8.30-11am, Wed 8.30-5pm, Thu 2.30-5pm, Fri 8.30-5pm



Please consider the environment before printing this e-mail

From: Abdul Saeed
Sent: Tuesday, 14 February 2017 1:08 p.m.
To: Human Ethics
Subject: Application for Ethical Approval

Hi,

I am Saeed, a Ph.D student in School of Teacher Education and my ID is "95456955". Attached is my application for approval. Please contact me any time in case of any query.

Regards,

Saeed

Appendix D

Tables of all correlation analyses with Spearman correlation coefficient

Table 1D: Correlations between the measures of language skills

| | MA | PA | OA | VK | GC |
|------------------------------|-------|-------|-------|-------|----|
| Morphological Awareness test | - | | | | |
| Phonological Awareness test | .35** | - | | | |
| Orthographic Awareness test | .25** | .38** | - | | |
| Vocabulary knowledge test | .59** | .34** | .29** | - | |
| Grammar knowledge test | .60** | .27** | .24** | .40** | - |

**Correlation is significant at the 0.01 level (2-tailed).

MA=Morphological Awareness

PA= Phonological Awareness

OA= Orthographic Awareness

VK= Vocabulary Knowledge

GC= Grammatical Competence

Table 2D: Correlations of language skills measures with the coherence measures

| | MA | PA | OA | VK | GC |
|----------------------------|-------|-------|------|-------|-------|
| IELTS | .46** | .19* | .16 | .39** | .32** |
| Holistic Coherence Scale | .34** | .26** | .18* | .36** | .34** |
| Topical Structure Analysis | .20* | -.01 | -.05 | .18* | .14 |
| Topic Based Analysis | -.18* | -.10 | -.15 | -.08 | -.14 |

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

MA=Morphological Awareness

PA= Phonological Awareness

OA= Orthographic Awareness

VK= Vocabulary Knowledge

GC= Grammatical Competence

Table 3D: Correlation of all measures of coherence

| | IELTS | HCS | TSA | TBA |
|-----|--------|--------|--------|-----|
| HCS | .51** | - | | |
| TSA | .28** | .34** | - | |
| TBA | -.36** | -.49** | -.42** | - |

**Correlation is significant at the 0.01 level (2-tailed).

HCS = Holistic Coherence Scale

TPA = Topical Structure Analysis

TBA = Topic Based Analysis

Table 4D: Correlations of language skills measures with the sub-components of the Topical Structure Analysis

| | MA | PA | OA | VK | GC |
|-------------------------------|-------|------|-------|--------|------|
| Parallel Progression | .17 | .19* | .27** | .11 | .21* |
| Sequential Progression | .28** | .01 | -.01 | .25** | .20* |
| Extended Parallel progression | -.02 | -.08 | .02 | -.03 | .13 |
| Unrelated progression | -.11 | -.07 | -.04 | -.28** | -.15 |
| Total Progressions | .12 | .01 | .09 | .03 | .17* |

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

MA= Morphological Awareness

PA= Phonological Awareness

OA= Orthographic Awareness

VK= Vocabulary Knowledge

GC= Grammatical Competence

Table 5D: Correlation of language skills measures with the sub-components of the Holistic Coherence Scale

| | MA | PA | OA | VK | GC |
|--------------|--------|-------|------|--------|--------|
| Focus | .41** | .28** | .19* | .40** | .35** |
| Context | .21* | .25** | .14 | .23** | .24** |
| Organisation | .38** | .28** | .10 | .32** | .40** |
| Closure | .34** | .19* | .06 | .41** | .20* |
| Cohesion | .23** | .17 | .17* | .32** | .21* |
| Grammar | -.27** | -.08 | .00 | -.28** | -.27** |

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

MA=Morphological Awareness

PA= Phonological Awareness

OA= Orthographic Awareness

VK= Vocabulary Knowledge

GC= Grammatical Competence

Table 6D: Correlation of language skills measures with the sub-components of the Topic Based Analysis

| | MA | PA | OA | VK | GK |
|-------------------------|------|-----|------|-----|------|
| Total Number of Moves | -.00 | .00 | .12 | .03 | -.03 |
| Total number of t-units | .09 | .04 | .21* | .07 | .02 |

**Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

MA=Morphological Awareness

PA= Phonological Awareness

OA= Orthographic Awareness

VK= Vocabulary Knowledge

GK= Grammatical Competence

Table 7D: Correlations between the Holistic Coherence Scale and its sub-components

| | HCS | Focus | Context | Organisation | Closure | Cohesion | Grammar |
|--------------|-------|-------|---------|--------------|---------|----------|---------|
| HCS | - | | | | | | |
| Focus | .71** | - | | | | | |
| Context | .65** | .45** | - | | | | |
| Organisation | .72** | .65** | .50** | - | | | |
| Closure | .65** | .49** | .47** | .53** | - | | |
| Cohesion | .64** | .48** | .57** | .43** | .56** | - | |
| Grammar | -.18* | -.14 | -.09 | -.17* | -.05 | -.13 | - |

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 8D: Correlations between the Topical Structure Analysis and its sub-components

| | TSA | PP | SP | EPP | UP |
|-------------------------------|-------|--------|-------|------|----|
| Topical Structure Analysis | - | | | | |
| Parallel Progression | -.03 | - | | | |
| Sequential Progression | .65** | .28** | - | | |
| Extended Parallel progression | .35** | .24** | .54** | - | |
| Unrelated progression | -.19* | -.28** | -.20* | -.08 | - |

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

TSA=Topical Structure Analysis

PP= Parallel progression

SP= Sequential progression

EPP= Extended parallel progression

UP= Unrelated progression

Table 9D: Correlation between Topic Based Analysis and its components

| | Topic Based Analysis | Total number of moves | Total number of t-units |
|-------------------------|----------------------|-----------------------|-------------------------|
| Topic Based Analysis | - | | |
| Total number of Moves | .35** | - | |
| Total number of t-units | -.29** | .73** | - |

** . Correlation is significant at the 0.01 level (2-tailed)

Table 10D: Correlations between sub-components of the Coherence measures of the study

| | PP | SP | EPP | UP | Focus | Context | Organisation | Closure | Cohesion | Grammar | TNM |
|--------------|--------|-------|-------|--------|-------|---------|--------------|---------|----------|---------|-----|
| PP | - | | | | | | | | | | |
| SP | .28** | - | | | | | | | | | |
| EPP | .24** | .54** | - | | | | | | | | |
| UP | -.28** | -.20* | -.08 | - | | | | | | | |
| Focus | .28** | .17* | .03 | -.28** | - | | | | | | |
| Context | .40** | .36** | .25** | -.20* | .45** | - | | | | | |
| Organisation | .31** | .20* | .01 | -.34** | .65** | .50** | - | | | | |
| Closure | .25** | .23** | .06 | -.20* | .49** | .47** | .53** | - | | | |
| Cohesion | .53** | .27** | .20* | -.23** | .48** | .57** | .43** | .56** | - | | |
| Grammar | .03 | -.14 | .10 | .17 | -.14 | -.09 | -.17* | -.05 | -.13 | - | |
| TNM | .50** | .21* | .35** | -.02 | -.09 | .10 | -.17 | .07 | .14 | .20* | - |

** . Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

PP= Parallel Progression

SP= Sequential Progression

EPP= Extended Parallel Progression

UP= Unrelated Progression

TNM= Total number of Moves

Appendix E

Table 1E: Results of standard multiple regression analysis of IELTS measure with language skills measures

| Variables | Regression statistics | | Standardised coefficients | | Collinearity statistics | |
|-----------------------------|-----------------------|----------------------------|---------------------------|------------------|-------------------------|-----------|
| | R ² | Sig. R ² | Beta | Sig. Beta | Tolerance score | VIF score |
| Total variability explained | .242 | F=7.707 <i>p</i> < .001 | | | | |
| Morphological Awareness | | | .309 | t=2.80 p=.006 | .516 | 1.940 |
| Phonological Awareness | | | .012 | t=0.12 p=.898 | .753 | 1.327 |
| Orthographic Awareness | | | .024 | t=0.26 p=.792 | .785 | 1.274 |
| Vocabulary Knowledge | | | .146 | t=1.48 p=.140 | .653 | 1.532 |
| Grammatical Competence | | | .107 | t=1.06 p=.288 | .630 | 1.589 |

Note: only the standardised beta score for Morphological Awareness is significant; and none of Collinearity statistics suggest a problem with multicollinearity (i.e., tolerance scores are all greater than 0.5 and VIF scores are all less than 2).

Table 2E: Results of standard multiple regression analysis of Holistic Coherence Scale measure with language skills measures

| Variables | Regression statistics | | Standardised coefficients | | Collinearity statistics | |
|-----------------------------|-----------------------|----------------------------|---------------------------|------------------|-------------------------|-----------|
| | R ² | Sig. R ² | Beta | Sig. Beta | Tolerance score | VIF score |
| Total variability explained | .224 | F=6.997 <i>p</i> < .001 | | | | |
| Morphological Awareness | | | .094 | t=0.84 p=.401 | .516 | 1.940 |
| Phonological Awareness | | | .090 | t=0.97 p=.330 | .753 | 1.327 |
| Orthographic Awareness | | | .037 | t=0.40 p=.685 | .785 | 1.274 |
| Vocabulary Knowledge | | | .177 | t=1.78 p=.077 | .653 | 1.532 |
| Grammatical Competence | | | .236 | t=2.34 p=.021 | .630 | 1.589 |

Note: only the standardised beta score for Grammatical competence is significant followed by Vocabulary knowledge; and none of Collinearity statistics suggest a problem with multicollinearity (i.e., tolerance scores are all greater than 0.5 and VIF scores are all less than 2).

Table 3E: Results of regression analysis of Topical Structure Analysis measure with language skills measures

| Variables | Regression statistics | | Standardised coefficients | | Collinearity Statistics | |
|-----------------------------|-----------------------|----------------------------|---------------------------|-------------------|-------------------------|-----------|
| | R ² | Sig. R ² | Beta | Sig. Beta | Tolerance score | VIF score |
| Total variability explained | .107 | F=2.898 <i>p</i> = .017 | | | | |
| Morphological Awareness | | | .129 | t=1.07 p=.285 | .516 | 1.940 |
| Phonological Awareness | | | -.148 | t=-1.49 p=.138 | .753 | 1.327 |
| Orthographic Awareness | | | -.062 | t=-0.64 p=.526 | .785 | 1.274 |
| Vocabulary Knowledge | | | .266 | t=2.49 p=.014 | .653 | 1.532 |
| Grammatical Competence | | | .013 | t=0.12 p=.903 | .630 | 1.589 |

Note: only the standardised beta score for Vocabulary Knowledge is significant; and and none of Collinearity statistics suggest a problem with multicollinearity (i.e., tolerance scores are all greater than 0.5 and VIF scores are all less than 2).

Table 4E: Results of regression analysis of Topic Based Analysis measure with language skills measures

| Variables | Regression statistics | | Standardised coefficients | | Collinearity statistics | |
|-----------------------------|-----------------------|----------------------------|---------------------------|-------------------|-------------------------|-----------|
| | R ² | Sig. R ² | Beta | Sig. Beta | Tolerance score | VIF score |
| Total variability explained | .048 | F=1.220 <i>p</i> = .304 | | | | |
| Morphological Awareness | | | -.118 | t=-0.95 p=.341 | .516 | 1.940 |
| Phonological Awareness | | | .002 | t=0.01 p=.986 | .753 | 1.327 |
| Orthographic Awareness | | | -.121 | t=-1.20 p=.230 | .785 | 1.274 |
| Vocabulary Knowledge | | | .019 | t=0.17 p=.865 | .653 | 1.532 |
| Grammatical Competence | | | -.065 | t=-0.58 p=.561 | .630 | 1.589 |

Note: None of Collinearity statistics suggest a problem with multicollinearity (i.e., tolerance scores are all greater than 0.5 and VIF scores are all less than 2).